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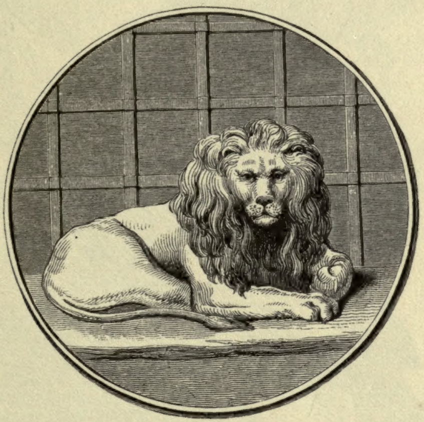
BRITISH BIRDS.

VOL. II.

A HISTORY OF BRITISH BIRDS.

BY

WILLIAM YARRELL, F.L.S. V.P.Z.S.



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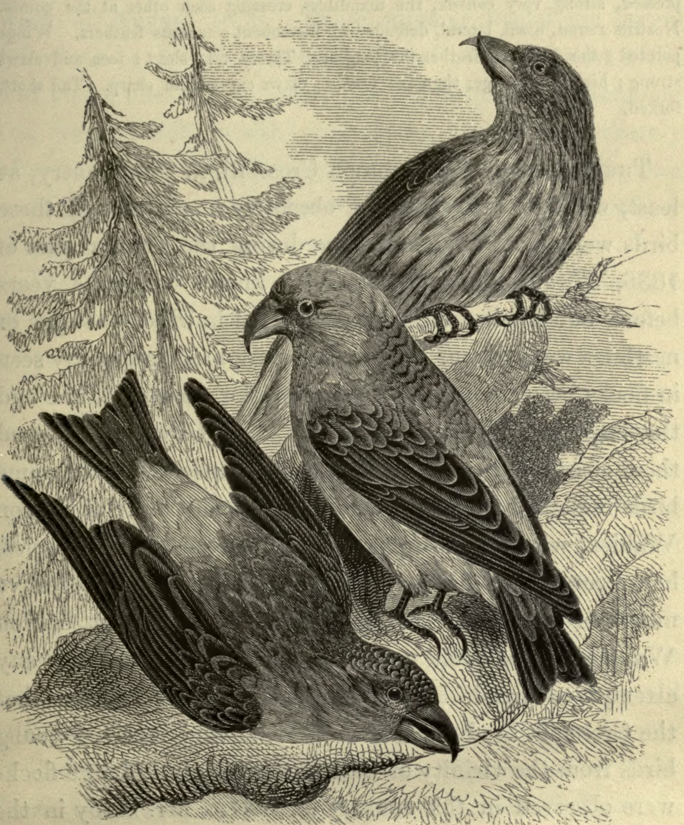
BRITISH BIRDS.

INSESSORES. *FRINGILLIDÆ.*
CONIROSTRES.



THE COMMON CROSSBILL.

Loxia curvirostra.

Loxia curvirostra,	*Common Crossbill,*	PENN. Brit. Zool. vol. i. p. 425.
" "	*The* "	MONTAGU, Ornith. Dict.
" "	" "	BEWICK Brit. Birds, vol. i. p. 157.

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Loxia	*curvirostra,*	*Common Crossbill,*	Flem. Brit. An. p. 76.
„	„	„ „	Selby, Brit. Ornith. vol. i. p. 329.
„	„	„ „	Jenyns, Brit. Vert. p. 141.
„	„	„ „	Gould, Birds of Europe, pt. xv.
„	„	*Bec-croise commun,*	Temm. Man. d'Ornith. vol. i. p. 328.

Loxia. *Generic characters.*—Beak rather long, thick at the base, much compressed, strong, very convex, the mandibles crossing each other at the points. Nostrils round, basal, lateral, defended by incumbent setaceous feathers. Wings pointed ; the first quill-feather the longest. Tarsus very short ; toes and claws strong ; hinder toe longer than the tarsus ; claws curved and sharp. Tail short, forked.

The history of the Common Crossbill, in this country, at least, was involved in some obscurity; and though these birds were more abundant here during the greater part of 1836, '37, and '38, than has been known for some years before, but few instances have occurred in which the eggs or nestlings were taken. These birds are most frequently seen in flocks between the latter part of the month of June and the beginning of February; but Mr. Hoy has watched them closely in Suffolk, and satisfied himself that the same birds remained till May ; and Mr. Joseph Clarke of Saffron Walden, who has also paid great attention to this species, has recorded his having seen them during every successive month of one entire year in the plantations about Saffron Walden, yet he could never learn that they then made any attempt to breed. Mr. Bullock long ago suspected that the Crossbill bred in this country, having received young birds from the vicinity of Bath early in July. Large flocks were observed in this country in 1821. Mr. Selby in the month of June of that year obtained many, the females of which showed plainly, from the denuded state of their breasts, that they had lately been engaged in incubation. White of Selborne obtained Crossbills there in summer, and found that the females were in the same state as to plumage as those examined by Mr. Selby. Mr. Knapp has observed the same appearance in females killed early in August. Small flocks, including young birds, were seen in Dumfriesshire in June 1833 or '34. Mr. Heysham says there were flocks of Crossbills about Carlisle in June 1837; and twenty were killed by one person in Hampshire during the first week of August 1838. These summer flocks are ascertained to be family parties, composed of the parent birds and young ones of the year; the old birds are undergoing the usual moult, which commences almost immediately after incubation; the young birds of the year are in their nestling plumage, and do not complete their first moult or change till October, and sometimes still later.

The visits of this singular species to our shores happen at irregular periods, sometimes with intervals of many years; and some curious records of the appearance of large flocks in 1254 and in 1593 are still preserved. I have been favoured by the Rev. L. B. Larking of Ryarsh Vicarage, near Maidstone, with a copy from an old MS., which refers to this subject in the following terms:—"That the yeere 1593 was a greate and exceeding yeere of apples; and there were greate plenty of strang birds, that shewed themselves at the time the apples were full rype, who fedde uppon the kernells onely of those apples, and haveinge a bill with one beake wrythinge over the other, which would presently bore a greate hole in the apple, and make way to the kernells; they were of the bignesse of a Bullfinch, the henne right like the henne of the Bullfinch in coulour; the cocke a very glorious bird, in a manner al redde or yellowe on the brest, backe, and head. The oldest man living never heard or reade of any such like bird; and the thinge most to bee noted was, that it seemed they came out of some country not inhabited; for that they at the first would abide shooting at them, either with pellet, bowe, or other engine, and not remove till they were stricken downe; moreover, they would abide the throweing at them, in so much as diverse were stricken downe and killed with often throweing at them with apples. They came when the apples were rype, and went away when the apples were cleane fallen. They were very good meate."

From a note in the last edition of Bewick's History of British Birds, it would appear that Crossbills were numerous and visited other parts of England also, besides the county of Kent, in the year 1593.

J. Childrey in his *Britannia Baconica*, or The Natural Rarieties of England, Scotland, and Wales, published about six years before Merrett's *Pinax rerum naturalium Britannicarum*, says, page 13,—"In Queen Elizabeth's time a flock of Birds came into Cornwall about harvest, a little bigger then a sparrow, which had bils thwarted crosswise at the end, and with these they would cut an apple in two at one snap, eating onely the kernels; and they made a great spoil among the apples."

In June and July 1791, a bird-catcher at Bath caught one hundred pair, which were generally sold for five shillings each. In the winter of 1806, a flock inhabited for a time a clump of firs in a deep-sheltered valley at Penllergare in Glamorganshire, as I learn, by a communication from L. W. Dillwyn, Esq., who has favoured me with many ornithological notes. In 1821, Crossbills were numerous, and flocks were seen in various parts of the country, particularly in Oxfordshire, Worcestershire, and Warwickshire. In 1828 they appeared in Westmorland, in the winter of 1829 they were numerous in Yorkshire, and have been, I might almost say, plentiful in various parts of England from the winter 1835 to the present time (January 1839); probably induced to remain longer in this country now than formerly by the greater abundance of fir plantations, to which they particularly resort to avail themselves of the seeds of the numerous cones, which are their principal food during winter. In the months of July and August their visits, as already noticed, are made to those orchard countries where apples abound, the kernels or pips of which they manage, with their singularly formed beak, to cut down to and extract with ease; and hence one of the old names by which this bird was known, that of Shell Apple. They are very frequently brought alive to the London market, and many are purchased by individuals to watch their habits in confinement and the changes which take place in their plumage. They feed readily on hempseed, and busy themselves with extracting the seeds from fir cones, occasionally climbing in all directions over the wires of their cage, holding on by their hooked beaks, as well as their claws, like a Parrot. Mr. Gould says he saw in the bird-market of Vienna multitudes of Crossbills exposed for sale, with Swallows, Martins, and many others of the smaller birds, for the purposes of the table: of these the Crossbill appeared to be especially in request, and this is in accordance with the reports of those who have eaten them in this country and pronounced them to be excellent food.

From the various accounts of this species to be found in the different works devoted to Natural History, it appears to have been seen and obtained in almost every county in England. In Ireland Mr. Thompson says it is an occasional winter visitant, occurring more frequently in the North than in the South. In Scotland it has been killed in various localities, and Mr. Macgillivray gives the following interesting account from his own observation:—"In the autumn of 1821, when walking from Aberdeen to Elgin, by the way of Glenlivat and along the Spey, I had the pleasure of observing, near the influx of a tributary of that river, a flock of several hundreds of Crossbills busily engaged in shelling the seeds of the berries which hung in clusters on a clump of rowan-trees.* So intent were they on satisfying their hunger, that they seemed not to take the least heed of me; and as I had not a gun, I was content with gazing on them, without offering them any molestation. They clung to the twigs in all sorts of positions, and went through the operation of feeding in a quiet and business-like manner, each attending to his own affairs without interfering with his neighbours. It was indeed a pleasant sight to see how the little creatures fluttered among the twigs, all in continued action, like so many bees on a cluster of flowers in sunshine after rain. Their brilliant colours, so much more gaudy than those of our common birds, seemed to convert the rude scenery around into that of some far-distant land, where the Redbird sports among the flowers of the magnolia. In that year, flocks of these birds were observed in various parts of Scotland."

The visits of Crossbills to fir-trees, and their mode of feeding on the seeds lodged between the scales and the body of the cone, are thus described by R. F. Wright, Esq., of Hinton Blewit, Old Down, Somersetshire, who very kindly sent me the following communication:—

"Having for some time remarked the cones, under a large fir-tree in the garden, lying in considerable numbers, and mostly pecked, I could not account for the circumstance, until, passing near the tree one afternoon in the beginning of August 1838, my attention was attracted by a shrill chirping, which I soon discovered proceeded from a small flock of birds, about six in number, who were disporting on the higher branches of the tree. I soon succeeded in having three of them killed; and they proved to be the *Loxia curvirostra* in fine plumage. They were extremely tame, and seemed unconscious of harm; for when the first was killed, the rest only flew into the thicker parts of the tree, and it was not until two others were shot, that the remainder took their departure, and I saw no more of them for some days: however, in a short time, three returned, and I did not suffer them to be molested in any way, intending to observe their motions; but after the recent attack upon them, they were evidently more shy; still they appeared several times each day on their favourite tree, generally at stated periods, early in the morning, and about four or five o'clock in the afternoon, when I have observed them clinging to a branch and breaking off the pendent cones with a loud snap; then flying with them in their beak to the upper side of the bough or other convenient station, and commence extracting the seeds, holding the cone chiefly in one claw by pressure against the branch; yet it often happened that the cone soon fell from the bird's grasp, as it frequently did in the act of detaching them from the tree. I have occasionally seen a Crossbill break a cone off in the middle, and holding the piece in one claw, in the manner of a parrot, tear it in pieces and pick out the seeds. This continued for two or three weeks, when their visits became few and far between, till at length the birds disappeared altogether. Their flight was rapid, making a shrill, though not unmusical note whilst on the wing, and a kind of continuous chirping, like young birds, occasionally when in the tree." In a second letter this gentleman further observes that larger flocks came under his notice later in the year. Their food was gathered from the larch; they visited the Scotch firs, flitting from branch to branch, but not feeding. While with some friends observing a considerable flock, suddenly, as if warned of our presence by a sentinel, we entirely lost sight of them, so completely had they concealed themselves among the branches. On another occasion, having shot two pair from the same trees, after closely searching every tree and not perceiving the slightest movements, one of our party climbed up to reach a bird that was lodged, when eighteen or twenty simultaneously flew out of the same trees, uttering their usual shrill cry. A bird-catcher informed me that he had taken alive near one hundred and fifty during the last summer about the plantations in the vicinity of Bath, and that these birds were equally numerous seventeen or eighteen years ago in the same locality.

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* The mountain ash—*Pyrus aucuparia.*

Apparently but very few instances of the nests of these birds being found in any country are recorded, and even the time of their breeding is not stated with much precision; Bechstein, indeed, says that neither their laying nor their moulting has any fixed season. The editor of the last edition of Pennant's British Zoology, says, "I know but one certain instance of the Crossbill breeding in England, and that on a pine tree within two miles of Dartford in Kent. The nest, about the size of that of a Blackbird, was made on the lowest fork of the tree, composed of dry twigs of a loose texture; however, no eggs were laid, for from the too great curiosity of frequent observers, the birds forsook it." Mr. Joseph Clarke of Saffron Walden, whose account of these birds has been before referred to, says, "Some eight or ten years ago, early in March, a pair made a nest at the Audley End aviary, near this town, in which the female deposited five eggs. The nest was of a loose texture, not unlike that of the common Greenfinch, though not near so well, or so carefully built; the eggs also were not unlike those of that bird, but larger; they, however, deserted them without making any attempt at incubation, although I believe they were perfectly undisturbed. About the same time, a pair also built their nest in a garden in this town, on an apple-tree, but were shot before they had completed it." A more conclusive instance has been briefly referred to by M. Necker in his valuable Memoir of the Birds of Geneva, in which it is stated that a nest was made in a fir, the materials were grass, moss, and portions of fir; the nest contained three young ones, covered with feathers, which were dark green, with blackish longitudinal marks; the mandibles not then crossed, but like those of a young Greenfinch; the parent male, red; the female green: the voice a single sharp note, frequently repeated, and also when flying from one tree to another; all their actions very paroquet like. Such is the substance of the brief account supplied by M. Necker; and the fact that the mandibles are not crossed over till the bird is obliged to seek its own living, exhibits one of those beautiful provisions of Nature, under which the formative process remains suspended till the age and necessities of the animal require the particular development.

On the European continent, the Crossbills visit Spain and Genoa, and are seldom seen further south, but have occasionally been taken in Sicily. They inhabit the Alps and Pyrenees, the pine forests of Switzerland and Germany, Poland, Russia, Siberia, and eastward over Asia, even to Japan. They inhabit also Denmark, Norway, and Sweden, where Professor Nilsson says they build their nests on the uppermost branches of firs in the winter months. M. Sundeval, a Naturalist of Stockholm, who accompanied a recent expedition to North Cape, believes that the

Crossbills breed at all seasons. Linnæus, in the account of his Tour in Lapland, mentions having seen Crossbills there on the 22nd of May.

The most recent account I am acquainted with, of the discovery of the nests and eggs of the Common Crossbill, was supplied to Mr. Charlesworth while conducting the Magazine of Natural History, by H. L. Long, Esq., of Hampton Lodge, near Farnham, Surrey, and appeared in the volume for the year 1839, page 236.* The following are extracts: — "It is now five or six years since I began to observe the Crossbills; they were at first but few, and rarely seen, now they are in considerable numbers, and visible every day. If they migrate at all in the summer, some of them, the young birds, perhaps, certainly remain behind, for some are to be seen here every month in the year. I, therefore, early in February last, urged upon the attention of the labourers hereabouts, to keep a diligent watch in the plantations; and this day, April 13th, I have had the satisfaction of receiving a nest with four eggs, from the Holt forest in this neighbourhood. This is the third nest that has been met with in the Holt; the first was taken with two eggs; and then, on the 7th of April, one with four young birds, apparently above a fortnight old, which would date the commencement of the nest early in the month of March. These three nests were all found in the thick top of a young Scotch fir, of about thirteen or fourteen years growth. I have thus the pleasure of sending you the top of a young Scotch fir, with the nest of a Crossbill in it. Two of the eggs, and a young bird, the crossing of the mandibles in which is scarcely discoverable; such a construction of the bill would indeed be useless, as long as the parent birds supplied the food. The contents of the crop of the young birds appear to consist, almost exclusively, of the *blanched* seeds of the larch.

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* See also page 310.

"The nest is rather small in proportion to the size of the bird, being only four inches and a half across the top, outside measure, where it is widest, and the central cavity but three inches in diameter. The outside is strengthened with a few slender twigs of fir, then a layer of coarse dry grass, lined with finer grass and a few long hairs. It is lodged close to the central or main stem of a Scotch fir, about thirty inches below its highest point, at the base of the shoots of the year 1837; here the nest is supported underneath by five or six ascending lateral branches of the fir, which so entirely conceal it, that it can scarcely have been perceptible from the ground, and the occasional visits of the parent birds probably betrayed their retreat.

"The eggs measure seven-eighths of an inch in length and five-eighths of an inch in breadth, the colour white, slightly tinged with pale skim-milk blue, and sparingly speckled with red.

"The young bird appears to be about three weeks old, and measures four inches and a half in length, the wing from the carpal joint to the end only two inches and a half long, the base of each primary feather being covered with its membranous sheath, or only as yet what is commonly termed pen-feathered. Both mandibles of the beak straight, the under mandible shutting within the upper; the plumage of the head, back, rump, and all the under surface of the body greyish white, tinged with yellow, and streaked longitudinally with dusky brown; the feathers of the wings and tail dark brown, edged and tipped with pale wood brown, legs and toes flesh colour."

It has been considered and stated, that the Common Crossbill of North America was too small in size to be of the same species as that of Europe; but the measurement given by Mr. Audubon of the American bird, viz., whole length seven inches, extent of wings eleven inches, is equal to that of our own bird, and some of our English examples are even the smaller of the two. The general description of the plumage and its changes, as given in the second volume of the Biography, page 560, agrees with the appearances of our bird; and Mr. Audubon concludes his account of the American species with the following sentence:—"I have carefully compared skins of the American bird with others of that found in Scotland, but have not succeeded in detecting any differences sufficient to indicate a specific distinction." The localities inhabited by the Crossbill in North America are thus referred to in the work just quoted:—"I have found this species more abundant in Maine, and in the British Provinces of New Brunswick and Nova Scotia, than anywhere else. Although I have met with it as early as the month of August in the Great Pine Forest of Pennsylvania, I have never seen its nest." The habits of the birds in the two countries are identical.

The plumage of the nestling Crossbill has been already described. The next appearance, that of young birds when first seen in this country in June and July, presents a greyish white on the head, neck, and all the under surface of the body, streaked longitudinally with dusky brown; the wings and tail uniform dull brown. At this age, as observed by Mr. Blyth, they resemble the female Siskin in their plumage; but the males are distinguished from the females by having the striated portion of the plumage considerably more distinct, and more vividly contrasted, than that of the female. The upper bird in the group at the head of this subject represents a young bird.

By the month of September the young males have become more uniform in colour, the stripes are more diffused, and their first autumnal moult commences by a change to one of three different states,—namely, to red only, or to yellow only, while others change to red and yellow mixed, some feathers being red, some yellow, and some orange, the last being the effect of red and yellow combined. The red and yellow tints probably become much brighter as the males grow older, many grades of tints being observable, some of which are as brilliant as others are dull.

A red male, now before me, that had completed his moult during his first autumn, has the beak dull reddish brown, darkest in colour towards the tip of the upper mandible; irides dark brown; the head, rump, throat, breast, and belly, tile red; the feathers on the back mixed with some brown, producing a chestnut brown; wing-coverts, quill, and tail-feathers, nearly uniform dark brown; tail short, slightly forked; vent, and under tail-coverts, greyish white; legs, toes, and claws, dark brown. The central figure of our group represents such a bird.

A second male bird killed at the same time as the red bird just described, has the head, rump, and under surface of the body, pale yellow, tinged with green; the back olive brown; wings and tail-feathers like those of the red bird.

A third male, killed at the same time, has the top of the head and the back a mixture of reddish brown and dark orange; the rump reddish orange; the upper tail-coverts bright orange; the chin, throat, and upper part of the breast, red, passing, on the lower part of the breast, belly, and sides, to orange.

Red males that have moulted in confinement have changed during the moult to greenish yellow, and others to bright yellow ; thus apparently indicating that the yellow colour was that of the older livery ; but young males, as before observed, certainly sometimes change at once to yellow, without going through either the red or the orange-coloured stage. The brightest colours, whether green, yellow, red, or orange, pervade the feathers of the rump, and the upper tail-coverts.

In captivity I have known several instances of red and yellow coloured specimens changing back to dull brown, as dark, or even darker, than their early plumage. This might be the effect of particular food, which is known to exercise such an influence on other birds ; but whether having once assumed bright tints, they ever, in a wild and healthy state, go back to olive brown, or more dull colours, has not, I believe, been ascertained.

Young females, from the striated appearance of their first autumn dress acquire a greenish yellow tint on the top of the head, and on the whole of the under surface of the body, mixed with greyish brown ; the rump and upper tail-coverts of primrose-yellow, tinged with green ; wings, tail, and legs, coloured as in the male ; but, as far as I am aware, no females have been found bearing the red-coloured plumage. The lower figure in our group is from a female.

Mr. Henry Doubleday, of Epping, possesses two skins of the Common Crossbill, having dull white tips to the feathers of both sets of the wing-coverts ; these birds, from their bulk and length, I believe to be varieties only ; the true White-winged Crossbill, to be hereafter described, is a very different bird from this, being shorter, and much less robust in its form.

The Common Crossbill, however, varies a little in size, depending on sex and age. Young males are the smallest, and seldom measure more than six inches and a quarter in length; old females are the largest, and frequently measure seven inches in length: the wings rather long and pointed, indicating considerable powers of flight; the average extent from tip to tip, about eleven inches; from the carpal joint to the end of the first quill-feather, which is the longest, three inches and three-quarters; the second quill-feather a very little shorter than the first; the third a little shorter than the second, and the fourth feather one quarter of an inch shorter than the third.

Besides several skins in my own collection of birds, killed in July, September, November, and January; some skins selected with reference to particular states of plumage, and opportunities of examining from time to time various specimens kept in confinement for observation, I have been favoured with many others. W. Wells, Esq. of Redleaf, very kindly sent me some in different states of plumage from Penshurst, where these birds were recently so numerous that nine were killed at one shot. The Rev. William Browne, of Cheam, sent me five specimens from Devizes soon after Christmas. I have had the use of a dozen in various states of plumage from Mr. Joseph Clarke of Saffron Walden, and as many from Mr. Henry Doubleday of Epping, in which locality these birds have been unusually numerous.

The upper figure of the group at the head of this subject, as before observed, represents a young bird; the middle figure is from an old male; the lower figure is from an adult female.

Since the previous portion of this subject was written, I have, by the kindness of Mr. John Leadbeater, of Brewer Street, had an opportunity of examining a young Crossbill, which was undoubtedly bred in this country during the spring of the present year (1839), and confirms in various points that which has been here detailed. This young bird was brought from Hampshire at the latter end of March, and was obtained within a few miles of Winchester. Its whole length is only five inches; the feathers of the wings and tail not yet completed; the former measuring but three inches from the carpal joint to the end, and the tail-feathers only extending five-eighths of an inch beyond the ends of the upper tail-coverts. This bird cannot have flown far from the nest in which it was reared, and was probably hatched about the beginning of March. In the colours of its plumage it very closely resembles those observed on young birds of the year when obtained in June, as previously described,—namely, the head, neck, upper part of the back, the rump, and all the under surface of the body, greyish white, streaked longitudinally with dusky brown; the feathers of the wings and tail hair-brown, with narrow edges of pale brown; the beak, though rather long, has both its mandibles perfectly straight, the lower one just shutting within the edges of the upper, nor is there the slightest indication to which side either mandible would hereafter be inclined. I may here add, that an opinion prevails that the sexes in the Crossbill may be known by the direction of the curves of the mandibles, those of the males turning outward in the contrary direction to those of the females; but the examination of a great many specimens, in reference to this point, has convinced me that this is not a rule to be depended upon, the upper mandible in both sexes turning sometimes to the right and sometimes to the left. I observe a record in the Essex Literary Journal for January 1839, that the Crossbill bred in Orwell Park, near Ipswich, in the year 1822.

The peculiar formation and direction of the parts of the beak in the Crossbill, its anomalous appearance, as well as the particular and powerful manner in which it is exercised, had long excited in me a desire to examine the structure of an organ so curious, and the kindness of a friend supplied me with the means. To those who have not made the habits and economy of birds an object of investigation, it may be necessary to premise that our three species of Crossbills are the only British Birds that exhibit, or seem to require, any lateral motion of the mandibles, and it is my object here to describe the bony structure and muscles by which this peculiar and powerful action is obtained.

The beak of the Crossbills is altogether unique in its form; the mandibles do not lie upon each other with their lateral edges in opposition, as in other birds, but curve to the right and left, and always in opposite directions to each other. In some specimens the upper mandible is turned to the right, the lower mandible curved to the left; in others the position of the mandibles is reversed as to their direction. In the specimen I examined, the upper mandible curved downwards, and to the left; the under portion turned upwards, and to the right, as the figures 1 and 2, in the vignette at the end of this subject, will demonstrate. When holding the head of this bird in my fingers, I found that I could bring the point of the under mandible in a line underneath, and touching the point of the upper, but not beyond it, towards the left side; while on its own side the point passed with ease to the distance of three-eighths of an inch. The upper mandible has a limited degree of vertical motion on the cranium, the superior maxillary and nasal bones being united to the frontal bones by flexible bony laminæ. The form, also, as well as the magnitude of the processes of the bones of the head are also peculiar to this bird.

The pterygoid processes of the palatal bones are considerably elongated downwards, as shown at figure 3, letter *a*, to afford space for the insertion of large pterygoid muscles. The os omoideum on each side, figure 3, letter *b*, is strongly articulated to the os quadratum, figure 3, letter *c*, affording firm support to the moveable portion of the upper mandible. Letters *d*, *d*, refer to the jugal bone, which, united to the superior maxillary bone in front, is firmly attached by its posterior extremity to the outer side of the os quadratum; when, therefore, the os quadratum is pulled upwards and forwards by its own peculiar muscles, to be hereafter mentioned, the jugal bone on each side by its pressure forwards elevates the upper mandible.

The inferior projecting process of the os quadratum, to which the lower jaw is articulated, in most other birds is somewhat linear from before backwards, and compressed at the sides, admitting vertical motion only upwards and downwards; the same processes in the Crossbill are spherical, as shown at figure 3, letter *c;* the cavity in the lower jaw destined to receive this process is a hollow circular cup, figure 5, letter *a;* the union of these two portions, therefore, forms an articulation possessing much of the universal motion and flexibility of the mechanical ball and socket joint.

The lower jaw is of great strength, the sides or plates elevated, with prominent coronoid processes, figure 5, *b*, *b*, to which, as well as to the whole outer surface of the plates, the temporal muscle is attached; and in a head of this bird, which had been divested of all the soft parts, I found, on sliding the lower jaw laterally upon the upper, as performed by the bird, that before the coronoid process is brought into contact with the pterygoid on its own side, the extreme points of the mandibles were separated laterally to the extent I have already mentioned,—namely, three-eighths of an inch.

The temporal and pyramidal muscles on the right side of the head, that being the side to which the lower jaw inclined, were considerably larger than those on the left side, as represented in figures 1, 2, and 4, letters *a* and *b*, and indicated by their bulk the great lateral power this bird is capable of exerting, to be hereafter noticed. The unusually large size of the pterygoid muscles on each side was very conspicuous, figure 2, letters *c*, *c*; the space for them being obtained by the great distance to which the articulated extremities of the lower jaw were removed, and the food of the bird being small seeds, rendered a narrow pharynx sufficient for the purpose of swallowing.

The muscles which depress the lower mandible are three in number, only one of which, the great pyramidal, is visible, figures 1 and 4, letter *b*. This large and strong muscle covers two other small ones, the triangular and square muscles, so called from their peculiar shape. These three muscles, all of which have their origin on the occipital portion of the cranium, are inserted by strong tendons on the under and back part of each extremity of the lower jaw, behind the centre of motion, and consequently by their simultaneous contraction raise the point to which they are attached, and depress the anterior part of the mandible. The lower portions of the ossa quadrata are pushed somewhat forward by this compression, assisted by two small muscles not exhibited; but the situation of which may be explained by a reference to figure 3. One of these, a small flat muscle, arises from the septum of the orbits behind the small aperture observed in the septum, and passes downward to be inserted upon the projecting styloid process of the os quadratum; the second is a small pyramidal-shaped muscle arising also from the septum, anterior to the other muscle, and passing downwards and backwards, is inserted upon the omoideum, both muscles by their contraction pulling the os quadratum forwards, and thus elevating the upper mandible. The depressors of the lower jaw, and the elevators of the upper jaw, therefore, act together to separate the mandibles.

To close the mandibles, the temporal and pterygoid muscles elevate the lower jaw, assisted by two slender slips, marked *d*, *d*, figure 2, which, extending forwards to the superior maxillary bones, act in concert by bringing them down.

When the lateral motion is required, the great pyramidal muscle on the right side pulls the extremity of the lower jaw, to which it is attached backwards; the pterygoid muscle of the left side at the same time powerfully assisting by carrying that side of the lower jaw inwards.

Having thus described the muscles of the mandibles in birds generally, and their peculiar mode of action in the Crossbill, I shall quote Mr. Townson's description of the manner in which they are made subservient to the use of the bird in feeding. "The great pine forests, such as the Hartz in Germany, are the natural places of residence of the Crossbeaks, and the seed of the cones of these trees their food, and it is to pull out the seeds from between the squamæ, or scales of the cones, that this structure is given them. Their mode of operation is thus:—They first fix themselves across the cone, then bring the points of the maxillæ from their crossed or lateral position, to be immediately over each other. In this reduced compass they insinuate their beaks between the scales, and then opening them,—not in the usual manner, but by drawing the inferior maxilla sideways,—force open the scales."

At this stage of the proceeding the aid of the tongue becomes necessary; and this organ is no less admirably adapted for the service required. The os hyoides, or bone of the tongue, has articulated to its anterior extremity an additional portion formed partly of bone with a horny covering,—figures 6 and 7, letter *a*. In shape it is narrow, about three-eighths of an inch in length, and extends forwards and downwards, the sides curved upwards, the distal extremity shaped like a scoop, somewhat pointed, and thin on both edges, the proximal extremity ending in two small processes elongated upwards and backwards above the articulation of the bone of the tongue, each process having inserted upon it a slender muscle, *b*, figures 6 and 7, extending backwards to the glottis, and attached to the os hyoides, which muscles, by their contraction, extend and raise the scoop-like point. Underneath the articulation of this horny and grooved appendage is another small muscle, *c*, figure 7, which is attached at one extremity to the os hyoides, at the other to the moveable piece, and by its action as an antagonist to the upper muscles, bends the cutting point downwards and backwards; while, therefore, the points of the beak press the scale from the body of the cone, the tongue, brought forward by its own muscle (genio hyoideus), is enabled, by the additional muscles described, to direct and insert its cutting scoop underneath the seed, and the food thus dislodged is transferred to the mouth; and it will be seen by a reference to the first figure, that when the mandibles are separated laterally in this operation, the bird has an uninterrupted view of the seed in the cavity with the eye on that side to which the under mandible is curved.

"The degree of the lateral power," says Mr. Townson, "is surprising, and they are fond of exercising it for mere amusement; they are, therefore, not a little mischievous. My pets would often come to my table whilst I was writing, and carry off my pencils, little chip boxes in which I occasionally kept insects, and other similar objects, and tear them to pieces in a minute. Their mode of operation is by first pecking a little hole, in this they insert their bill, and then split or tear the object by the lateral force. When I treated them, as I often did, with almonds in their shells, they got at the kernel in the same manner; first pecking a hole in the shell, and then enlarging it by wrenching off pieces by the lateral power."

Notwithstanding Buffon's assertion to the contrary, they can pick up and eat the smallest seeds; and they shell or husk hemp, and similar seeds, like other birds, so perfect and useful is this singular instrument. The remarks of Buffon on the beak of this bird, which he characterises as "an error and defect of Nature, and a useless deformity," exhibit, to say the least of them, an erroneous and hasty conclusion, unworthy the spirit of the science he cultivated. During a series of observations on the habits and structure of British Birds, I have never met with a more interesting, or more beautiful example, of the adaptation of means to an end, than is to be found in the beak, the tongue, and their muscles, in the Crossbill.

Explanation of the vignette:—

Fig. 1. Head of the Crossbill, side view; *a*, temporal muscle; *b*, great pyramidal muscle.

2. Head viewed from below: *c*, *c*, pterygoid muscles; *d*, *d*, graciles muscles.

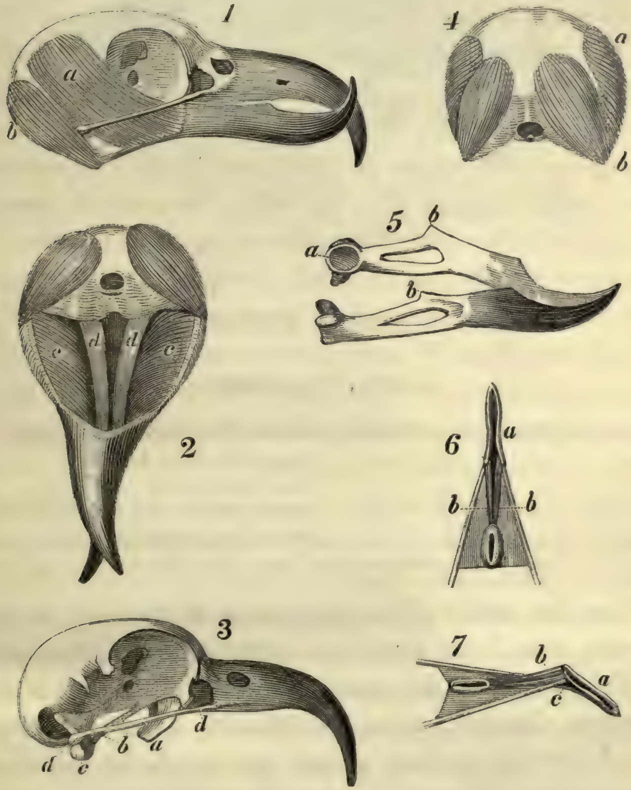
3. Head, side view: *a*, pterygoid process; *b*, os omoideum; *c*, os quadratum; *d*, *d*, os jugale.

Fig. 4. Head viewed from behind: *a*, right temporal muscle; *b*, great pyramidal muscle.

5. Lower jaw, side view: *a*, cavity for articulation; *b*, *b*, coronoid processes.

6. Tongue seen from above: *a*, horny scoop; *b*, *b*, extensor muscles.

7. Tongue, side view: *a*, horny scoop; *b*, extensor muscles; *c*, flexor muscle.


1
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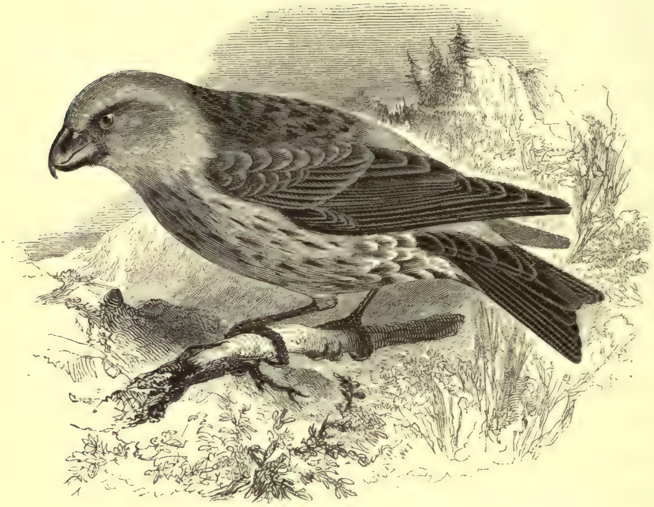
INSESSORES. *FRINGILLIDÆ.*
CONIROSTRES.



THE PARROT CROSSBILL.

Loxia pityopsittacus.

Loxia pityopsittacus,	*Parrot Crossbill,*	BEWICK, Brit. Birds, vol. i. p. 160.
" "	" "	FLEM. Brit. An. p. 76.
" "	" "	SELBY, Brit. Ornith. vol. i. p. 332.
" "	" "	JENYNS, Brit. Vert. p. 142.
" "	" "	GOULD, Birds of Europe, pt. vi.
" "	*Bec-croisé perroquet,*	TEMM. Man. d'Ornith. vol. i. p. 325.

THE first notice of the appearance of this bird in this country that I am acquainted with, occurs in Pennant's British Zoology, at the commencement of his account of the Common Crossbill, where the following statement will be found:—"We received a male and female of the large variety out of Shropshire: the bill was remarkably thick and short, more incurvated than that of the common bird, and the ends more blunt." This bird was considered only as a variety of the common species by Gmelin, who called it *Loxia curvirostra major ;* but it is now admitted as a distinct species by Bechstein, Brehm, Meyer, Naumann, and Nilsson, besides those authors enumerated under the title here, and probably many others of good authority.

Since the year 1776, the date of that edition of Pennant's British Zoology which contains his notice, this species has occurred twice at least in Scotland, and several times in England. Mr. Blyth has recorded one instance of its being shot in Surrey; and a second instance of its being obtained in the autumn of 1835 in Epping Forest. Several specimens were brought for sale to the London market in March 1838, and were eagerly purchased by those who were acquainted with the specific difference, and aware of their rarity. Two of these I saw and examined; Mr. Bartlett was the purchaser of a third, and I am indebted to him for the opportunity of figuring from the sternum of that bird to show the difference in size between it and that of our more common species. These representations form the subject of the vignette at the end of this article.

Specimens of the Parrot Crossbill are frequently brought from Germany to this country by dealers in birds' skins. The food of this bird, and its mode of obtaining it, are, as far as known, the same as that of the Common Crossbill; but the Parrot Crossbill is a much rarer bird. In high northern latitudes it breeds in May; but in more southerly countries it is said to go to nest much earlier in spring, or even before the winter has entirely passed away; it is also said to lay four or five ash-coloured eggs, spotted with red at the larger end.

According to M. Temminck, this bird is only an occasional visiter either in Holland or France; it inhabits Germany, and the parts of the European continent still farther north. M. Nilsson includes the species in his Birds of Sweden, but mentions that specimens are more frequently obtained in other parts of Scandinavia. Mr. W. C. Hewitson obtained two specimens in Norway.

This species has not, that I am aware, been found in North America, although from its high northern geographical range in Europe this might have been expected. It is distinguished from the Common Crossbill by its greater comparative length, its more bulky body, and the much greater thickness of the beak at its base.

A young bird of the year, in the possession of Mr. John Leadbeater, has the beak of a blackish horn colour; the head, neck, lower part of the back, and all the under surface of the body, greyish white, thickly streaked longitudinally with dark greyish brown; the rump, neck, and breast, slightly tinged with yellow; wing-coverts dark brown, both sets tipped with pale brown; wings and tail-feathers blackish brown, also tipped with pale brown; legs lead colour; claws black.

An older male, after his first moult, has the head, back, rump, and upper tail-coverts, the throat, neck, and breast, tile red; darkest on the back, lightest on the rump; the feathers of the back and breast still retaining many of the dusky brown streaks which mark the first plumage; the beak dark brown, the under mandible reddish brown at the base; the irides hazel; wings, quill feathers, and tail, uniform dark brown; legs, toes, and claws, also dark brown.

Mr. Bartlett's bird was a red male, in the moult when killed, and all the new feathers when coming were of a greenish yellow.

The female does not at any time differ greatly from the young male of the year, before assuming his second suit.

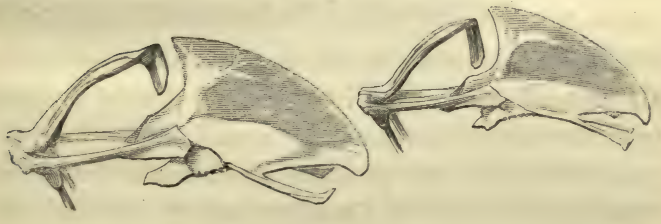
The upper parts are greenish ash with patches of brown; throat and neck grey, clouded with yellowish brown; the rest of the under surface ash colour, varied with yellowish green; rump yellow; vent and under tail-coverts greyish white, the base of each feather greyish brown.

M. Nilsson has figured a bright red male, and a female in plumage, as last described, in illustration of this species in his Scandinavian Fauna.

The whole length of a male in red plumage is seven inches and five-eighths. Extent of wings twelve inches. From the carpal joint to the end of the longest quill-feather not quite four inches: the wing in its form and relative length of the quill-feathers, resembles that of the Common Crossbill: the first quill-feather is the longest; the second quill-feather a very little shorter than the first; the third a little shorter than the second, and the fourth feather one quarter of an inch shorter than the third.

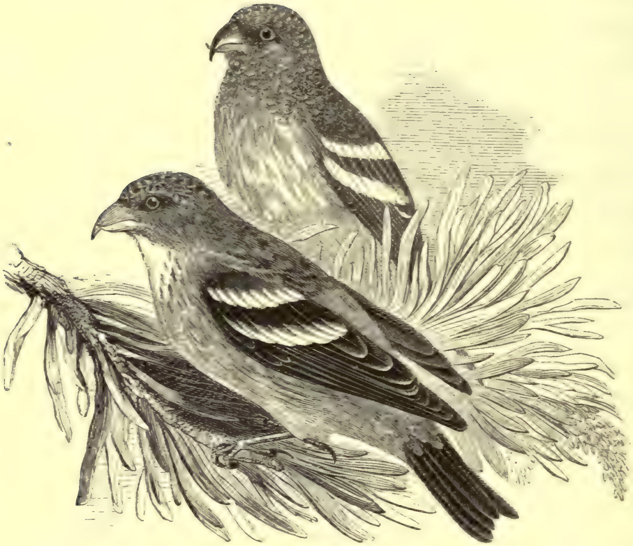
Mr. Macgillivray, in his work, gives the measurements of a larger example of this species, probably from the specimen in the Edinburgh Museum:—"Length to the end of the tail, eight inches; wing from flexure, four inches three-twelfths."

The vignette below represents the breast-bone of the Parrot Crossbill and that of the Common Crossbill.



INSESSORES.
CONIROSTRES.

FRINGILLIDÆ.



THE WHITE-WINGED CROSSBILL.

Loxia leucoptera.

Loxia falcirostra,	*White-winged Crossbill,*	Penn. Brit Zool. vol. i. p. 428.
" "	" "	Flem. Brit. An. p. 76.
" *leucoptera,*	" "	Jenyns, Brit. Vert. p. 143.
" "	" "	Gould, Birds of Europe, pt. iv.
" "	" "	Eyton, Rarer Brit. Birds, p. 21.
" "	*Bec-croisé leucoptere,*	Temm. Sup. Man. d'Ornith. vol. iii. p. 243.

The White-winged Crossbill was first described by Dr. Latham in the third volume of his General Synopsis, page 108, but without bestowing upon it, at that time, any systematic name: the specimens were received from North America; like the two Crossbills already described, this third species has occurred in considerable numbers in some parts of Europe, and is believed by a German naturalist to belong also to Northern Asia. The first systematic name, that of *leucoptera*, was given by Gmelin.

This species was not included by M. Temminck in the second edition of his Manual of the Birds of Europe, published in 1820, but has been admitted in the Supplement to the Land Birds of that work, and it is there stated that several have been captured in the north of Germany, and that it has been killed at Nuremberg. It is included by M. Brehm in his work on the birds of Germany, under the term *Crucirostra bifasciata;* and it has also been noticed by M. Constantin Gloger, who says, that besides single specimens which have been occasionally met with in Sweden, and various parts of Germany, it occurred in considerable numbers in Silesia and Thuringia in the autumn of 1826. M. Gloger, in his remarks on the appearance of this species, states his reasons for believing that its migration took place from Asia; but he admits that his bird, though named by him *tænioptera*, was identical with the North American *L. leucoptera.*

The localities in which this species has appeared in Europe have been thus primarily noticed, to show the probability of its occurrence in this country, and accordingly it appears that a female was shot within two miles of Belfast in January 1802. Of this a notice was sent to the Linnean Society, and it is recorded. Pennant also mentions in his British Zoology, that he had been told of a second, killed in Scotland. H. E. Strickland, Esq. of Cracombe House, Evesham, in a letter with which he has favoured me, mentions that he possesses a specimen of the White-winged Crossbill, killed near Worcester in 1836; and Mr. Hoy informs me that some years ago Mr. Seaman, of

Ipswich, who is well acquainted with birds, being out with his gun, looking for specimens, saw five or six small birds on a tree, which from their peculiar manners attracted his attention; he fired, and killed one, which proved to be a White-winged Crossbill; but the more fortunate survivors did not allow him an opportunity of repeating the experiment.

Professor Nilsson, in his Scandinavian Fauna, says, writing from Lund, "Not more than two specimens of this pretty little Crossbill have been taken with us; but it appears that they are not unfrequently seen in central Sweden among the Crossbills which arrive in the months of October and November. Its manners are like those of the other Crossbills, but it has a different call-note, and a different song."

Since the publication of the first edition of this work, several records of the occurrence of the White-winged Crossbill have appeared in the Zoologist. One example is mentioned by Mr. Jerdon, as having been taken in Roxburghshire, in the month of March of the present year. Mr. J. Cooper of Birmingham had one alive, which was caught in that district; E. H. Rodd, Esq. of Penzance, has recorded one that was killed at Lariggan in Cornwall, and the Rev. C. A. Bury has mentioned on the authority of Mr. Butler, that a pair of these birds had been taken in the Isle of Wight.

This species appears to be more numerous in North America than in any other part; and to the publications of Ornithologists in that country I must refer for the particulars of the habits of this bird, which are not to be observed here.

"This species," says Charles Lucian Bonaparte, Prince of Musignano, in the second volume of his Ornithology of

America, in continuation of Wilson, page 88, "inhabits during summer the remotest regions of North America, and it is therefore extraordinary that it should not have been found in the analogous climates of the old continent.* In this, its range is widely extended, as we can trace it from Labrador, westward to Fort de la Fourche, in latitude 56°, the borders of Peace River, and Montagu Island on the North West coast, where it was found by Dixon. Round Hudson's Bay it is common, and well known, probably extending far to the north west, as Mackensie appears to allude to it when speaking of the only land bird found in the desolate regions he was exploring, which enlivened with its agreeable notes the deep and silent forests of those frozen tracts. It is common on the borders of Lake Ontario, and descends in autumn and winter into Canada, and the Northern and Middle States. Its migrations, however, are very irregular. They are seldom observed elsewhere than in pine swamps and forests, feeding almost exclusively on the seeds of these trees, together with a few berries. All the specimens I obtained had their crops filled to excess entirely with the small seeds of *Pinus inops*. They kept in flocks of from twenty to fifty, when alarmed suddenly taking wing all at once, and after a little manœuvring in the air, generally alighting again nearly on the same pines whence they had set out, or adorning the naked branches of some distant, high, and insulated tree. In the countries where they pass the summer, they build their nest on the limb of a pine, towards the centre; it is composed of grasses and earth, and lined internally with feathers. The female lays five eggs, which are white, spotted with yellowish. The young leave the nest in June, and are soon able to join the parent birds in their autumnal migration. In the northern countries, where these birds are very numerous, when a deep snow has covered the ground, they appear to lose all sense of danger, and by spreading some favourite food, may be knocked down with sticks, or even caught by hand while busily engaged in feeding. Their manners are also in other respects very similar to those of the Common Crossbill."

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* C. L. Bonaparte was not then aware of the memoir of M. C. Gloger, which appeared in the fourteenth volume of the *Nova Acta*, published at Bonne in 1828, the same year in which the second volume of the Ornithology was published in Philadelphia.

Dr. Richardson states that this bird "inhabits the dense white spruce forests of the North American fur countries, feeding principally on the seeds of cones. It ranges through the whole breadth of the continent, and probably up to the sixty-eighth parallel, where the woods terminate, though it was not observed by us higher than the sixty-second. It is mostly seen on the upper branches of the trees, and when wounded, clings so fast, that it will remain suspended after death. In September it collects in small flocks, which fly from tree to tree, making a chattering noise; and in the depth of winter it retires from the coast to the thick woods of the interior."

Mr. Audubon, in his fourth volume of American Ornithological Biography, now just published, says, "I found this species quite common on the islands near the entrance of the Bay of Fundy, which I visited early in May 1833. They were then journeying northwards, although many pass the whole year in the northern parts of the State of Maine, and the British provinces of New Brunswick and Nova Scotia; where, however, they seem to have been overlooked, or confounded with our Common American Crossbill. Those which I met with on the islands beforementioned were observed on their margins, some having alighted on the bare rocks; and all those which were alarmed immediately took to wing, rose to a moderate height, and flew directly eastward. On my passage across the Gulf of St. Lawrence to Labrador, in the same month, about a dozen White-winged Crossbills, and as many Mealy Redpolls, one day alighted on the top yards of our vessel; but before we could bring our guns from below they all left us, and flew ahead, as if intent on pointing out to us the place to which we were bound. Within the limits of the United States I have obtained some during winter along the hilly shores of the Schuylkill River in Pennsylvania; also in New Jersey, and in one instance in Maryland, a few miles from Baltimore, beyond which, southward, I have never met with this species, nor have I heard of any having been seen there. Its song is at times mellow and agreeable, and in captivity it becomes gentle and familiar."

Young birds have the beak of dark horn colour; towards the point, the upper mandible is so compressed the edges are almost united; the lower mandible rather lighter in colour; the feathers at the base of the beak, near the nostrils, greyish white; irides dark hazel; head, neck, and back, dull greenish grey, mottled with a darker tint, which pervades the centre of each feather; the rump tinged with greenish yellow; the under surface of the body of a lighter grey, longitudinally streaked with dusky brown; the shoulders mottled with two shades of dull greyish brown; both sets of wing-coverts dull black, with white tips, forming two conspicuous bars across the wings; all the quill-feathers nearly black; the primaries and secondaries with narrow lighter-coloured edges; the tertials edged and tipped with white; the tail forked, the feathers dull black, with narrow light-coloured edges; under tail-coverts dark at the base, with greyish white ends; legs, toes, and claws, dark brown.

The male in his second plumage has the beak, neck, back, rump, and under surface of the body, crimson red; the base of each feather dark grey: the quill and tail feathers darker than in the younger bird, or than in either of the other species, and almost uniform black; the tertials only being tipped with white.

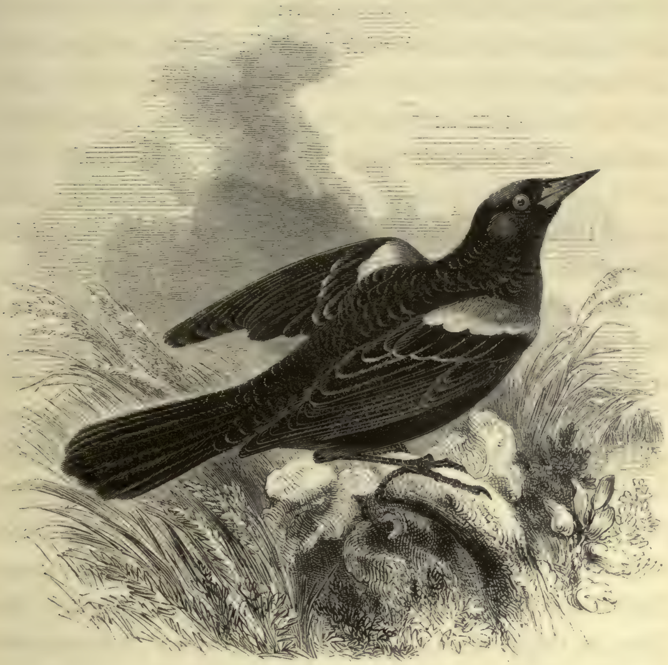
A male described by the Prince of Musignano, and believed to be older than the preceding bird, had a light buff orange tinge where the other was crimson; the wings and tail of a still deeper black.

The female at first like the young bird, but afterwards loses the striated appearance on the under surface, and attains a lemon yellow colour on the rump, and over a portion of the breast.

Whole length about six inches. From the carpal joint to the end of the wing, three inches and three-eighths: the first three primaries very nearly of equal length, and the longest in the wing; the fourth feather shorter than the third, but much longer than the fifth.

INSESSORES.
CONIROSTRES.

STURNIDÆ.



THE RED-WINGED STARLING.

Agelaius phœniceus.

Sturnus predatorius,	*Red-winged Starling,*	Lubbock, Faun. of Norfolk, p. 36.
,, ,,	,, ,,	Wilson, Amer. Ornith. v. iv. p. 30.
Icterus phœniceus,	,, ,,	Bonap. Syn. p. 52.
Agelaius, ,,	*Red-winged Maize-bird,*	Swains. and Rich. Faun. Bor. Amer. v. ii. p. 280.
Icterus, ,,	*Red-winged Blackbird,*	Nuttall, Man. v. i. p. 169.
Agelaius, ,,	*Red-winged tarling,*	Aud. Birds of Amer. v. iv. p. 31.

Agelaius. *Generic Characters.*—Bill shorter than the head, stout, straight, conical, tapering to an acute point. Nostrils basal, oval, with a small operculum. Wings of moderate length, with the outer four quill-feathers nearly equal. Tail rather long, rounded. Legs and feet strong

"A SPECIMEN of the Red-winged Starling of America (*Sturnus predatorius*) came into the possession of J. H. Gurney, Esq., in a fresh state, during June 1842; and was said to have been shot near Rollesby Broad, and to have had another of the same species in company with it. It was a male bird, in good condition and in almost adult plumage; the stomach full of the remains of beetles."

"I have detailed these circumstances, as it seems probable, if these points were so, that these foreign visitants intended to nest here. Wilson says they resort to low grounds where reeds and alders grow for that purpose, and that the bird in America is often termed Marsh Blackbird or Swamp Bird."

Of the occurrence of this species, new to our Catalogue of British Birds, as here mentioned by the Rev. Richard Lubbock, a record appeared in the Zoologist, vol. i. p. 317, and I received an early notice from J. H. Gurney, Esq., of Norwich, who purchased the specimen, and has most kindly sent it up to London for my use in this work. The figure at the head of this subject was drawn and engraved from that bird.

I have also, through the influence of F. Bond, Esq., been favoured with the loan of another example of this species which was shot among the reeds at Shepherd's Bush, a swampy situation about three miles west of London, on the Uxbridge-road, where an extensive tract of land, from which brick-earth has been dug out, is overgrown with reeds. This specimen was shot in the autumn of 1844.

Wilson, the American ornithologist, quoting Edwards, refers to another specimen "shot in the neighbourhood of London many years ago; and on being opened its stomach was found to be filled with grub-worms, caterpillars and beetles."

The range of country in the western hemisphere frequented by this species, and over which it migrates, extends from Mexico on the south, to a great distance up the Missouri, westward and northward, and to Labrador and Newfoundland on the east.

Mr. Audubon remarks, "The Marsh Blackbird is so well-known as a bird of the most nefarious propensities, that in the United States, one can hardly mention its name, without hearing such an account of its pilferings as might induce the young student of nature to conceive that it had been created for the purpose of annoying the farmer. That it destroys an astonishing quantity of corn, rice and other sorts of grain, cannot be denied; but that before it commences its ravages, it has proved highly serviceable to the crops, is equally certain."

Flocks of these birds, most formidable by their numbers, assail the various corn crops whenever they are in a state to afford them food. After the corn is gathered the profuse gleanings of the old rice, corn and buck-wheat fields supply them abundantly. Later in the season they assemble around the corn-cribs, and in the barn-yards, greedily and dexterously picking up every thing within their reach, and Mr. Bullock mentions having seen them very numerous and bold near the city of Mexico, where they followed the mules to steal a tithe of the barley with which they were fed. The accounts of this bird by Wilson, Audubon and Nuttall are interesting.

Dr. Richardson's observations on the Red-winged Starling, in the Fauna Boreali-Americana, are as follows:—

"This showy, but destructive bird winters in vast numbers in the southern districts of the United States, and in Mexico, frequenting swampy places, and roosting at night among the reeds. It begins to enter Pennsylvania towards the end of March, but seldom reaches the Saskatchewan before the beginning of May, and it does not pass beyond the fifty-seventh parallel. On its first arrival in the fur-countries it feeds on grubs; but as soon as the grain sown in the vicinity of the trading posts begins to germinate, it associates itself with the Saffron-headed Maize-birds and Boat-tails, and is occupied the whole day in tearing up and devouring the sprouting plants, returning to the work of devastation as often as driven away. It breeds in swampy places, in Pennsylvania in the beginning of May, and on the Saskatchewan about the twentieth of June. Its eggs are of a pale bluish white, with a circle of spots and streaks of dark liver-brown round the thick end, one or two scattered spots of the same colour, and some faint blotches of purplish grey."

Some of the habits of this American bird being observed to resemble some of those of our well-known Starling, next to be described, obtained for it the name of Red-winged Starling, in illustration of which, Mr. Audubon, in his recently completed work on the Birds of America, in seven volumes, royal 8vo., says, "Towards evening they alight in the marshes by millions, in compact bodies, settle on the reeds and rushes close above the water, and remain during the night, unless disturbed by the gunners. When this happens, they rise all of a sudden, and perform various evolutions in the air, now gliding low over the rushes, and again wheeling high above them, preserving silence for awhile, but finally diving suddenly to the spot formerly chosen, and commencing a general chuckling noise, after which they remain quiet during the rest of the night."

The Yarmouth specimen, a male, has the bill shining black; the irides dark brown; the head, neck, scapulars, and the space between them, black; the feathers below the neck edged with reddish brown; the feathers covering the anterior bend of each wing red, the lesser wing-coverts orange yellow and bounding the red; wings and tail black, the greater coverts edged with buffy brown; the tail rounded in form, the outer three feathers on each side being graduated; all the under surface of the body black; legs, toes, and claws, shining black.

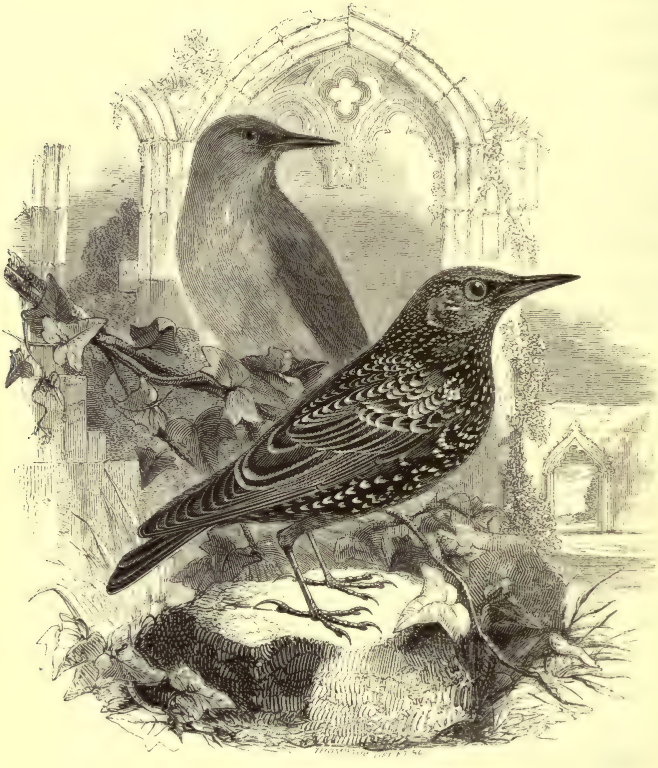
The specimen killed at Shepherd's Bush is the older male bird of the two, and has lost all the buffy margins from the feathers of the back, scapulars, and greater wing-coverts; the whole of the plumage, except that on the bend of the wing, being of one uniform glossy black.

The whole length of the male nine inches; the wing from the anterior bend four inches and a half.

Mr. Audubon describes the female as much smaller, with upper parts dark brown, the feathers edged with light brown; some of the smaller wing-coverts tinged with red; wings and tail blackish brown, the feathers margined with brownish red, the first row of small coverts and secondary coverts narrowly tipped with whitish; a yellowish band over the eye; lower parts longitudinally streaked with dusky whitish, the fore neck strongly tinged with dull carmine. The young similar to the female, but without red on the small wing-coverts or throat, the latter part with the sides of the head being pale yellowish brown.

INSESSORES.
CONIROSTRES.

STURNIDÆ.



THE COMMON STARLING.

Sturnus vulgaris.

Sturnus	*vulgaris,*	*Common Stare,*	Penn. Brit. Zool. vol. i. p. 396.
„	„	*Stare or Starling,*	Montagu, Ornith. Dict.
„	„	„ „	Bewick, Brit. Birds, vol. i. p. 111.
„	„	*Common* „	Flem. Brit. An. p. 86.
„	„	„ *Stare,*	Selby, Brit. Ornith. vol. i. p. 340.
„	„	„ *Starling,*	Jenyns, Brit. Vert. p. 143.
„	„	„ „	Gould, Birds of Europe, pt. iv.
„	„	*Etourneau vulgaire,*	Temm. Man. d'Ornith. vol. i. p. 132.

STURNUS. *Generic Characters.*—Beak almost straight, pointed, depressed, wider than high, and slightly subulated. Nostrils basal, lateral, and partly closed by a prominent membrane. Wings long, pointed ; the first feather very short, the second the longest. Feet with three toes in front, one behind ; the middle toe united to the outer ones as far as the first joint.

THE STARLING is one of our handsome birds, both with reference to shape and plumage ; and from being very numerous as a species, and pretty generally distributed, is not only very well known, but, from a variety of associations, is a great favourite with many. Being intelligent and sprightly, with a retentive memory, and great flexibility of voice, the males are often kept in confinement, where they learn to whistle tunes, and imitate some of the various sounds of the human voice with facility and correctness. In their more natural state they are social, living in flocks throughout the greater portion of the year ; and in some instances, though their labours are distinct, they do not separate widely, even at the breeding-season, if suitable places for an assemblage of nests can be found in the same locality. Mr. Waterton, the admirer, protector, and defender of the Starling, made various cavities in the wall of an old tower, near his residence, to induce these birds to remain and breed there, contrary to their previous habit : his wishes were gratified ; every cavity had its pair of undisturbed and happy tenants, and from the squabbling for original possession that occurred, more would probably have domiciled there could they have found room.

Dr. Beverley Morris of York, on the subject of the Starling when nest building, says in the Zoologist :—" I stood this morning for nearly an hour, watching a pair of Starlings. They had chosen a hole in a tree close to me for their nest, in the construction of which the female alone was engaged ; the male sate near, looking on, but never fetching any materials ; he seemed to be a sort of guard or sentinel, as he repeatedly drove off some sparrows that were too inquisitive as to the progress the nest was making. The female, in her arduous task, made on an average, by my watch, three trips per minute, with small twigs and bits of dry grass, which she picked up near the tree. Sometimes she took three or four small ones at one time; so that at this rate, supposing her to work for only six hours, she would have brought together upwards of a thousand sticks, &c., which would be more than sufficient to form her nest."

The Starling builds in church steeples, under eaves, and in holes of houses, towers, or ruins; sometimes in hollow trees, and often in cliffs, or high rocks overhanging the sea; occasionally in pigeon-houses. The nest is made of slender twigs, straw, roots, and dry grass; the eggs are four or five in number, of a uniform delicate pale blue, one inch two lines in length, by ten lines in breadth; these are hatched in about sixteen days, and the old birds are observed to be most assiduous in their attentions to their nestlings. Soon after the young birds leave the nest, both parents and offspring unite with other families of the same species, forming large flocks, which again associate, and may be seen feeding on commons and grass grounds, in company with Rooks, and occasionally with other birds. Their food consists of worms, insects in their various stages, and snails; in default of these they will eat berries and grain. They are frequently seen in meadows, searching for food among sheep and cattle. In the southern countries of Europe they devour ripe grapes and figs. In confinement they appear to prefer raw meat.

When the young are too much grown to continue to occupy the nest in which they were reared, the nights of summer and autumn being warm, these birds roost by thousands among reeds in the fenny parts of Essex, Cambridge, Huntingdon, Lincoln, and other counties; where alighting in myriads upon this flexible plant, they crush it to the water's surface, and large patches are seen lodged and beaten down like grain after a storm.

I am indebted to the kindness of the late Dr. Goodenough, Dean of Wells, for the following account of an extraordinary haunt of Starlings on the estate of W. Miles, Esq., at King's Weston:—"This locality is an evergreen plantation of Arbutus, Laurustinus, &c., covering some acres, to which these birds repair in an evening—I was going to say, and I believe I might with truth say—by millions, from the low grounds about the Severn, where their noise and stench are something altogether unusual. By packing in such myriads upon the evergreens, they have stripped them of their leaves, except just at the tops, and have driven the Pheasants, for whom the plantation was intended, quite away from the ground. In the day time, when the birds were not there, the stench is still excessive. Mr. Miles was about to cut the whole plantation down to get rid of them, two years ago, but I begged him not to do so on account of the curiosity of the scene, and he has since been well pleased that he abstained."

Another instance of a similar character was communicated to me in March last (1845), by Robert Ball, Esq., of Dublin, and has also appeared in print. "In the mass of thorn trees at the upper end of the Zoological Garden in the Phœnix Park, sleep every night, from the end of October to about the end of March, from one hundred and fifty thousand to two hundred thousand Starlings. This enormous number may appear an exaggeration, yet it is the estimate of many observations. When these starlings were first observed, they were estimated at from fifteen thousand to twenty thousand: but during three years they seem to have increased tenfold.

In winter, for the sake of the warmer temperature, Starlings frequently roost in pigeon-houses, and are accused of destroying both eggs and young Pigeons. This has been doubted; and as I can substantiate no charge on my own knowledge, I leave the cause of the accused Starlings in the hands of a very able advocate, before referred to, who has much better opportunities of personal observation than I have. Colonel Montagu, when residing near Kingsbridge, observed that in very hard weather large flocks of Starlings flew towards West Devon and Cornwall, returning when the frost broke up; and Mr. Couch, at Polperro, and Mr. E. H. Rodd, at Penzance, have observed that large flocks of these birds visit Cornwall in autumn and winter, but that few remain to breed; they even depart, Mr. Couch says, in his Cornish Fauna, much earlier than the migratory birds that go to the northern parts of Europe.

The Starling is found in almost every part of the United Kingdom. In the Hebrides, according to Mr. Macgillivray, and in Orkney, it is found in thousands; where, Mr. Low says, it is also a favourite, as few houses are built, but several holes are left in the wall for its convenience, of which it always, as if sensible of the favour, avails itself, and repays it with a song, and an occasional display of its antic mimicry. In the winter, Mr. Low observes, when the earth is locked up with frost, and worms or insects no longer to be obtained, the Starling visits the sea side, where it lives upon marine animals, insinuating the point of its beak under stones, turning them over with a jerk, and immediately seizing what may be underneath. A feeling in favour of this bird exists also in Shetland. Mr. Dunn says it frequently builds its nest in the walls of the houses so low that it may be easily reached with the hand, yet it is seldom disturbed by the people.

The Starling is common over Scandinavia, and on the Faroe Islands; and from the North of Europe is found as far east as Nepal, the Himalaya Mountains, Calcutta, China, and Japan. It is found also in the countries both north and south of the Caucasian range; in Persia; at Trebizond, by Keith Abbot, Esq., and at Smyrna by Mr. Strickland. It inhabits both the northern and southern countries bounding the Mediterranean; and Mr. Gould, in his Birds of Europe, says that it has been found in Africa as far south as the Cape of Good Hope. As might be expected, it has been taken at Madeira and the Canary Islands, and is reported to be common at the Azores. Mr. Charles Darwin saw this bird at Terceira, one of the Azores, in September 1836. The geographical range of this species appears, therefore, to be very extensive. Its flight is vigorous and rapid. In progression on the ground the Starling walks by alternate steps with each leg, like the Crows.

Adult males in their third summer, having previously moulted in two preceding autumns, have the beak yellow, except close to the base; the irides brown; the head, neck, back, and all the under surface of the body, almost black, but varied with purple and green, which are reflected with great brilliancy in different lights; the feathers on the upper part of the breast elongated and pointed; those on the shoulders partially tipped with buff colour; the wing-coverts, quill and tail feathers, greyish black, edged with pale reddish brown; the legs dark reddish brown.

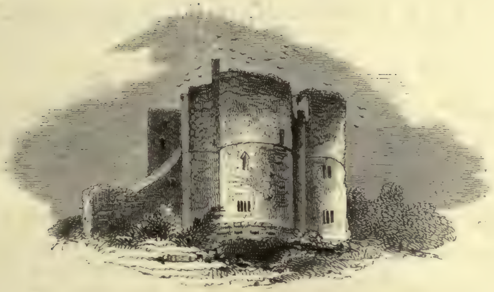
The whole length of the bird eight inches and a half. From the carpal joint to the end of the wing, five inches and one-eighth: the first feather very short, not more than half an inch in length; the second feather the longest in the wing; the third but little shorter than the second; the fourth one quarter of an inch shorter than the third; the other primary quills diminishing regularly in succession, each about a quarter of an inch shorter than the quill-feather which precedes it.

A male in his second summer having moulted but once, has not acquired the fine yellow beak, and both the upper and under surface of the body are varied by a greater number of light-coloured spots. Very old males acquire an additional number of spots at their autumnal moult, which they carry through the winter to the commencement of the following spring, when the light-coloured tips being many of them worn off, and the beak becoming yellow, they present the appearance first described.

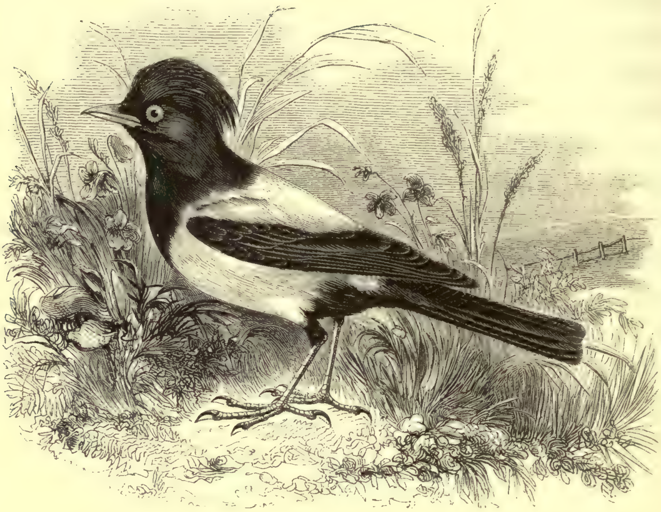
Young birds of the year, before their first autumnal moult, are of a uniform greyish brown colour; the throat white, and a tinge of white on the belly and vent; the feathers of the wings and tail darker brown, with light reddish brown edges. In this stage the young Starling has been called the Solitary Thrush, and has also been considered the young of another Continental species. Montagu's specimen being still preserved in his collection at the British Museum, no doubt remains that his bird was nothing more than a young Starling before the commencement of its first moult. During the first moult, which occurs in its first autumn, the plumage of the young Starling presents a curious mixture, the feathers appearing in patches, some of plain brown, and others of the dark colour of the second dress.

The female Starling is very similar to the male at the same age, but the plumage is rather less brilliant in colour, and the white spots on the under surface of the body are larger than those of the male; but both sexes carry a much greater number of spots from autumn to spring than from spring to autumn; the moult, however, only occurs and produces a change in the autumn; the change in the spring is effected without moulting, by a partial alteration in the colour of some of the feathers, producing greater brilliancy, and by the loss of many of the light-coloured tips.

Albinoes and buff-coloured varieties of the Starling are not uncommon.



INSESSORES. *STURNIDÆ.*
CONIROSTRES.



THE ROSE-COLOURED PASTOR.*

Pastor roseus.

Turdus	*roseus,*	*Rose-coloured*	*Ouzel,*	PENN. Brit. Zool. vol. i. p. 413.
"	"	"	"	MONTAGU, Ornith. Dict.
"	"	"	*Starling,*	BEWICK, Brit. Birds, vol. i. p. 115.
Pastor,	"	"	*Ouzel,*	FLEM. Brit. An. p. 66.
"	"	"	*Pastor,*	SELBY, Brit. Ornith. vol. i. p. 343.
"	"	"	"	JENYNS, Brit. Vert. p. 144.
"	"	"	"	GOULD, Birds of Europe, pt. iii.
"	"	*Martin roselin,*		TEMM. Man. d'Ornith. vol. i. p. 136.

PASTOR. *Generic Characters.*—Beak in the form of an elongated cone, compressed, slightly curved, with a small notch near the point. Nostrils basal, lateral, oval in shape, partly closed by a membrane covered with small feathers. Feet strong; three toes in front, one behind, the outer toe connected by membrane at its base to the middle toe. Wings with the first feather very short, the second and the third the longest in the wing.

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* A shepherd, or herdsman, and this bird was probably so called, because, like the Starling, it is frequently seen in company with sheep and cattle.

The genus *Pastor* was proposed by M. Temminck for several birds which exhibit various relations to the Starlings and the Crows; only one of these, the Rose-coloured Pastor, is an accidental visiter to this country; and though several years sometimes intervene from one occurrence to another, the beauty of the bird attracts particular notice, and its capture has probably been more regularly recorded than that of many other birds that are equally rare.

It may not be altogether useless to include here a brief enumeration of those instances that have come to my knowledge, some from the records of the observers, and others from private communications. The bird was first noticed as British by Edwards, who appears to have taken his representation from a specimen killed at Norwood. Mr. Gould, in his Birds of Europe, mentions one that was shot by his friend John Newman at Iver Court; and Shaw records one that was killed in Oxfordshire. It has been met with in Sussex; and during the summer of 1838, a pair were seen near Christchurch, in Hampshire, and shot at: the male only was obtained; the female, though believed to be wounded, got away: this communication was sent to me by the Hon. Mr. Harris, son of the Earl of Malmesbury. A pair, now in the British Museum, were killed in Devonshire; and two or three other instances of the occurrence of this species in the same county are recorded by Dr. Edward Moore, in his published catalogue of the Birds of Devonshire, in the Magazine of Natural History for 1837. This bird has been shot at Helston in Cornwall, and also on the Scilly Islands, the latter specimen is now in the collection of E. H. Rodd, Esq., of Penzance. Mr. L. Ll. Dillwyn has in his possession a specimen shot in July 1836, while eating cherries in a nursery-garden, near Swansea. Mr. Eyton has recorded one instance that came to his knowledge about four years ago at Holyhead; and it has also been killed twice in Lancashire. Mr. Thompson sends me word that it has, in a few instances, occurred in summer, in various parts of Ireland. North of London, a specimen was shot on the 15th August 1830, at Haydon House, a few miles from Royston. Mr. Hoy has recorded a notice of one at Woodbridge in July 1832. On the 10th of July 1838, a fine specimen was shot by one of the gamekeepers of the Rev. J. Holmes, of Brooke Hall, Norwich. This gentleman very obligingly sent the bird to London, for my use in this work, and the figure at the head of this subject was drawn from that specimen. The Rose Pastor has also been obtained in the same county more than once besides, as recorded by Messrs. Paget, and Mr. J. D. Salmon. This species has been obtained in Lincolnshire, Yorkshire, Durham, and Northumberland. The museum at Newcastle contains one British-killed specimen, if not more. Mr. Selby mentions that a small flock were seen in company with Starlings, near Bamborough Castle, in July 1818; and two other birds have been killed within a comparatively short period, and both near Alnwick; one of which is now in the collection of the Rev. Oswald Head, of Howick Rectory, the other belongs to Mr. Moffatt, one of the gamekeepers of Earl Grey, at Howick, as communicated to me by Mr. Hutchinson, of Durham. Dr. Fleming has noticed one that was killed at Dunkeld. Thomas Macpherson Grant, Esq., of Edinburgh, has in his collection one shot in a garden in Forfarshire, on the 29th of September, 1831; and Mr. Bullock had a female that was taken at Hoy in Orkney.

Since the publication of the previous account, Mr. Heysham has sent me notice of one killed near Carlisle, and another has been killed in Kent.

This bird, like our Starling, has an extended geographical range. It is found, though rarely, in Sweden; and is said to have been obtained in Lapland. It is found in Russia and Siberia; and I have seen skins from four very widely separated localities in India. Colonel Sykes, in his Catalogue of the Birds of the Dukhun, says, "These birds darken the air by their numbers, at the period of the ripening of the bread grains, *Andropogon sorghum*, and *Ponicum spicatum*, in Dukhun, in December. Forty or fifty have been killed at a shot. They prove a calamity to the husbandman, as they are as destructive as locusts, and not much less numerous."

B. H. Hodgson, Esq., includes the Rose-coloured Pastor in his Catalogue of the Birds of Nepal, and Mr. Blyth finds it in the vicinity of Calcutta.

It inhabits Syria, Egypt, and Africa, passing occasionally in summer to breed in the warmer countries north of the Mediterranean. At Aleppo it is held sacred, because it feeds on the locust. Specimens have been obtained several times in the neighbourhood of Geneva; and in the translation of M. Bechstein's work on Cage Birds, it is stated that "a sportsman discovered in 1774, in the environs of Meiningen in Suabia, a flight of eight or ten Rose Ouzels, moving leisurely from south-west to north-east, and passing from one cherry-tree to another. He fired on these birds, only one fell, which was fortunately very slightly wounded, so that it soon recovered. Being immediately carried to M. Von Wachter, the rector of Frickenhausen, this clergyman took the greatest care of it: he gave it a spacious cage; and found that barley meal, moistened with milk, was as wholesome as agreeable to it. His kindness tamed it in a short time so far that it would come and take from his hand the insects which he offered it. It soon sang, also; but its warbling consisted at first of but a few harsh sounds, pretty well connected, however; and this became at length more clear and smooth. Connoisseurs in the songs of birds discover in this song a mixture of many others: one of these connoisseurs, who had not discovered the bird, but heard its voice, thought he was listening to a concert of two Starlings, two Goldfinches, and perhaps a Siskin; and when he saw that it was a single bird, he could not conceive how all this music proceeded from the same throat. This bird was still alive in 1802, and the delight of its possessor."

A dealer in birds, residing in Oxford Street, had three living specimens of the Rose-coloured Pastor for sale, in the summer of 1837 or 1838. This bird flies in flocks like the Starling, and in other habits and peculiarities also resembles that species; it feeds about and among flocks and herds, and frequently mounts on the backs of sheep and cattle to search for the insects, or their grubs, which are known to occupy such situations. Insects appear to form a principal portion of their food; but they are also partial to fruit, and have been frequently found in gardens. They build in holes of trees, and in cavities of old walls; the eggs are six in number, but I have not found any recorded notice of their colour.

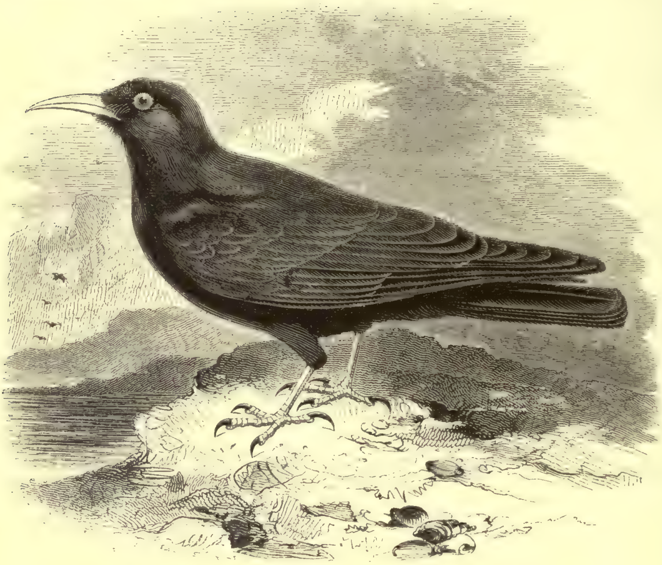
In the adult male the beak is of yellowish rose colour, except at the base of the under mandible, where it is almost black; the irides intense red brown; the head, neck, wings and tail, black, glossed with violet blue; the feathers on the head elongated, so as to form a flowing crest; the back, scapulars, and rump, of a delicate rose colour; the chin, throat, and front of the neck, black; breast, sides, and abdomen, like the back, of rose colour; thighs and under tail-coverts black; legs and toes yellowish brown; claws darker brown.

Whole length of the bird eight inches and a half. From the carpal joint to the end of the wing, five inches: the first feather very short; the second the longest in the wing; the third feather a little shorter than the second; the fourth a quarter of an inch shorter than the third.

In its second year the male has not so full a crest; the dark portions of the plumage have not the brilliancy of the same parts in the older male birds; the rose colour is pale or dull and occasionally mixed with brown.

In young birds of the year, the beak is yellow at the base, brown at the point; no indication of a crest on the head; the whole of the upper surface of the body is of a uniform dull brown; the feathers of the wings and tail of a darker brown tint, edged with white, or greyish ash colour; throat and abdomen pure white; the rest of the under parts ash brown; legs, toes, and claws brown.

INSESSORES. *CORVIDÆ.*
CONIROSTRES.



THE CHOUGH.

RED-LEGGED CROW.

Fregilus graculus.

Corvus	*graculus,*	*Red-legged Crow,*	**Penn.** Brit. Zool. vol. i. p. 294.
„	„	„ „	**Montagu**, Ornith. Dict.
„	„	*The Chough,*	**Bewick**, Brit. Birds, vol. i. p. 96.
Pyrrhocorax	„	„ *Cornish Chough,*	**Flem.** Brit. An. p. 89.
Fregilus,	„	„ „ „	**Selby**, Brit. Ornith. vol. i. p. 365.
„	„	„ „ „	**Jenyns**, Man. Brit. Vert. p. 144.
„	„	*The Chough,*	**Gould**, Birds of Europe, pt. vi.
Pyrrhocorax	„	*Pyrrhocorax coracias,*	**Temm.** Man. d'Ornith. vol. i. p. 122.

Fregilus. *Generic Characters.*—Beak longer than the head, strong, arched, and pointed. Nostrils basal, oval, hidden by small, closely-set feathers. Wings long, but rounded in form ; first quill-feather short, the fourth or fifth the longest in the wing. Tail square, or but slightly rounded. Feet strong ; toes four, three in front, one behind, tarsus longer than the middle toe, the outer toe united at its base to the middle one ; claws strong, and very much curved, that of the hind toe much the largest.

From the Starling and Pastor, the birds last described, the transition to the true Crows, by the intervening Chough, is easy and natural. The Crows generally, as observed by Mr. Swainson, " exhibit the greatest perfection, and the most varied powers, with which nature has invested this class of animals. This superiority consists, not in the extraordinary development of any one particular organ or quality, but in the union of nearly all those powers which have been separately assigned to other families. This perfection is best exemplified by looking to the economy of the ordinary Crows. In every climate, habitable to man, these birds are found. They are as well constructed for powerful flight, as for walking with a firm and stately pace on the earth. They feed indiscriminately on animals or on vegetables ; and when pressed by hunger, refuse not carrion : hence their smell is remarkably acute. They are bold, but wary ; live in common societies, and possess great courage. When domesticated they evince a power of imitating the human voice nearly equal to that of the Parrot ; while their cunning, pilfering, and hoarding dispositions, are all symptoms of greater intelligence than is found in most other families of birds."

The Cornish Chough, for which the genus *Fregilus* was established by Cuvier, is readily distinguished from the true Crows by the peculiar form of its beak. In this country the Chough is not a common bird, and is besides almost exclusively confined to the sea coast, where it inhabits the highest and most inaccessible portions of rocks or cliffs, about which it walks securely by means of its strong legs, toes, and claws. A bird kept by Colonel Montagu some years in his garden, was never observed to walk upon the grass by choice ; and it required a strong temptation to induce him to step off the gravel. Montagu's account of this bird forms an interesting illustration of the general habits of the species:—"His curiosity is beyond bounds, never failing to examine anything new to him: if the gardener is pruning, he examines the nail-box, carries off the nails, and scatters the shreds about. Should a ladder be left against the wall, he instantly mounts, and goes all round the top of the wall; and, if hungry, descends at a convenient place, and immediately travels to the kitchen window, where he makes an incessant knocking with his bill till he is fed or let in; if allowed to enter, his first endeavour is to get up stairs; and if not interrupted, goes as high as he can, and gets into any room in the attic story; but his intention is to get upon the top of the house. He is excessively fond of being caressed, and would stand quietly by the hour to be smoothed; but resents an affront with violence and effect, by both bill and claws, and will hold so fast by the latter, that he is with difficulty disengaged. Is extremely attached to one lady, upon the back of whose chair he will sit for hours; and is particularly fond of making one in a party at breakfast, or in a summer's evening at the tea-table in the shrubbery. His natural food is evidently the smallest insects, even in the minute species he picks out of the crevices of the walls, and searches for them in summer with great diligence. The common grasshopper is a great dainty, and the fern-chaffer is another favourite morsel; these are swallowed whole; but if the great chaffer be given to him, he places it under one foot, pulls it to pieces, and eats it by piecemeal. Worms are wholly rejected; but flesh, raw or dressed, and bread, he eats greedily, and sometimes barley with the pheasants, and other granivorous birds occasionally turned into the gardens, and never refuses hemp-seed. He seldom attempts to hide the remainder of a meal. With a very considerable share of attachment, he is naturally pugnacious, and the hand that the moment before had tendered him food and caresses, will repent an attempt to take him up. To children he has an utter aversion, and will scarcely suffer them to enter the garden. Even strangers of any age are challenged vociferously; he approaches all with daring impudence; and so completely does the sight of strangers change his affection for the time, that even his favourites and best benefactors cannot touch him with impunity in these moments of evident displeasure."

This bird in a wild state feeds on insects and berries and occasionally upon grain, but is seldom seen searching for them in the open fields. Mr. Wallace, of Douglas, in the Isle of Man, at the southern extremity of which, being very rocky, these birds breed in security, and from whence that gentleman had the kindness to bring me two skins in February last, tells me that he has seen them following the plough to obtain the grubs of insects that are thus exposed, and in the Field Naturalist's Magazine, it is recorded that in August 1832, a Red-legged Crow was killed on the Wiltshire Downs, near the Bath road, between Marlborough and Calne, by a man employed in keeping birds from corn; Mr. Blyth mentions having known it to occur on Mitcham Common in Surrey.

This bird makes a nest of sticks lined with wool and hair in the cavities of high cliffs, or in old castles, or church towers, near the sea; laying four or five eggs of a yellowish white colour, spotted with ash grey and light brown, the length one inch eight lines, by one inch one line in breadth. The voice of the Chough is shrill, but not disagreeable, and something like that of the Oyster-catcher. When on the wing at a moderate distance, the flight is similar to that of a Rook; but when walking on the ground, from its slender form, the appearance of the bird is more animated and its actions more graceful.

Pennant says, "The Chough is found in small numbers on Dover cliff, where they came by accident; a gentleman in that neighbourhood had a pair sent him as a present from Cornwall, which escaped and stocked these rocks." No date is mentioned, though apparently referring to his own time; but there is a poetical authority, at least, for the existence of this bird at Dover at a much earlier date. Shakspeare, in his description of the celebrated cliff which now bears his name, says in reference to its height,—

> "The Crows and Choughs* that wing the midway air
> Show scarce so gross as beetles."

Gilbert White in his 39th letter to Pennant, says, "Cornish Choughs abound, and breed on Beachy-head and on all the cliffs of the Sussex coast." I have seen it on the highest part of the cliffs between Freshwater Gate and the Needle Lighthouse in the Isle of Wight. Mr. Thomas Bond tells me this bird inhabits Gadcliff and Tyneham, in the Isle of Purbeck. It is not uncommon in some parts of Devonshire, as I learn from my friend Mr. George Mello. In Cornwall, Dr. Borlase quoting Upton, who wrote about the middle of the fifteenth century, says, the Cornish Chough was so great a favourite in those days, that some of the most ancient families bore these birds in their coat armour. The Chough is noticed as peculiar to Cornwall by Dr. William Turner in 1544, by Childrey in 1661, and by Merret in 1667. I have seen specimens from

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* Possibly Shakspeare meant Jackdaws, for in the Midsummer Night's Dream he speaks of russet-pated (grey-headed) Choughs, which term is applicable to the Jackdaw, but not to the real Chough.

Glamorganshire. In Ireland, Mr. Thompson informs me, the Chough is found in certain localities all round the coast. The Isle of Man has been already noticed as a locality, particularly the southern part, and the rock called the Calf of Man. Mr. Macgillivray mentions having met with this bird in Galloway and the Island of Barry, one of the outer Hebrides. Dr. George Johnston, in his address to the members of the Berwickshire Naturalists' Club in September 1832, noticed that the Chough breeds in the rocks between St. Abb's Head and Fast Castle, and refers to this fact being distinctly mentioned by Bishop Leslie in his history *de Origine Scotorum*, published in 1578, and it is included also as a bird of Scotland by Sir Robert Sibbald in his *Scotia Illustrata*, published in 1684; but further north than Scotland I find no notice of it.

The Chough is found in Guernsey, but not in Jersey. It is found on most of the high ranges of mountains in France and Switzerland, on the rocky country about Arragon in Spain; it is found also in the Isle of Crete, and in Egypt is said to inhabit the plains. It is found on the mountains of Persia, in the countries between the Black and the Caspian Seas, and north of the Caucasian range to the southern part of Siberia; it is also found on the Himalaya Mountains, B. Hodgson, Esq. includes it in his catalogue of the Birds of Nepal, and Mr. Blyth has obtained it in the vicinity of Calcutta.

The plumage of this bird is uniformly black, glossed with blue; the irides of two circles and two colours, the inner ring red, the outer ring blue; the eyelids red; the inside of the mouth and the tongue yellow; the wings reach nearly to the end of the tail, shining with more metallic lustre than the other parts of the plumage; the beak, legs, and toes, vermilion red; the claws shining black.

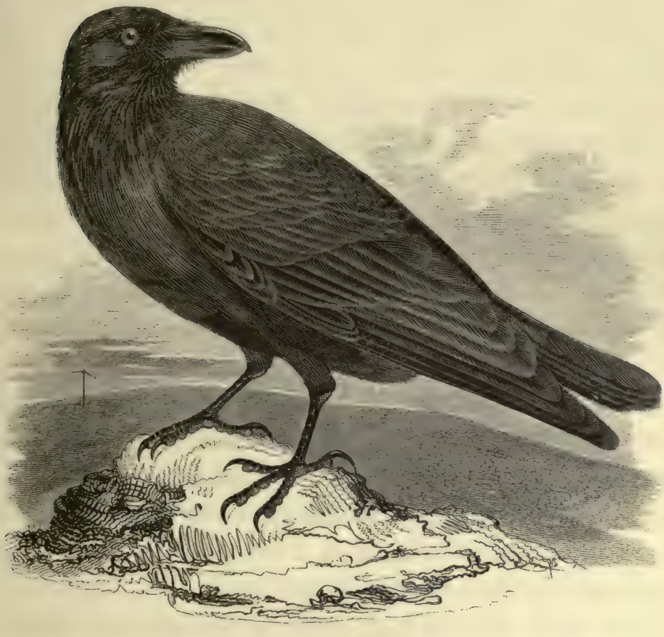
In the family of the Crows, the males are larger than the females. The male in this species measures almost seventeen inches in length. The beak from the projecting feathers to the point one inch and seven-eighths: from the carpal joint of the wing to the end of the longest quill-feather eleven inches and three-quarters; the first feather full three inches shorter than the second, and this an inch shorter than the third; the fourth a little longer than the third, and the longest in the wing.

The female of this species, obligingly sent me from Tyneham, in the Isle of Purbeck, by Mr. Thomas Bond, measured fourteen inches and a half in length; the beak one inch and a half from the projecting feathers to the point; the wing from the carpal joint to the end nine inches and three-quarters; the quill-feathers of the wing not so decidedly black as those of the male; beak, legs, and toes, vermilion red; claws black.

Young birds of the year have but little purple gloss on their plumage; legs, orange red.

INSESSORES.
CONIROSTRES.

CORVIDÆ.



THE RAVEN.

Corvus corax.

Corvus corax,	*The Raven,*	Penn. Brit. Zool. vol. i. p. 279.
„ „	„ „	Montagu, Ornith. Dict.
„ „	„ „	Bewick, Brit. Birds, vol i. p. 85.
„ „	„ „	Flem. Brit. An. p. 87.
„ „	„ „	Selby, Brit. Ornith. vol. i. p. 346.
„ „	„ „	Jenyns, Brit. Vert. p. 145.
„ „	„ „	Gould, Birds of Europe, pt. viii.
„ „	*Corbeau noir,*	Temm. Man. d'Ornith. vol. i. p. 107.

Corvus. *Generic Characters.*—Beak straight at the base, compressed at the sides, curved towards the point, and sharp at the edges. Nostrils basal, open, hid by stiff feathers directed forwards. Wings pointed; the first primary of moderate length, the second and third shorter than the fourth, which is the longest. Feet—three toes before, one behind, almost entirely divided; tarsus longer than the middle toe.

This is by far the largest specimen of the genus among British Birds, the character and size of the Raven causing it to be exceedingly well known, while from the great extent of its geographical range, north of the equator, it is also as universally recognised in many other parts of the world as it is in this country. Bold, as well as sagacious, with a quick eye, and a keen sense of smell, the Raven is always an object of suspicion to shepherds and husbandmen. No sooner does an animal betray any signs of weakness, but the Raven is there on the watch for an opportunity to satisfy his appetite. At first he makes his approach with great caution; because, as it has been aptly observed, though glad to find others carrion, or to make carrion of them, if he can do it with impunity, he takes good care that none shall make carrion of him. If the herdsman absents himself, and no other interruption occurs, he makes his first attack upon the eye, afterwards feeds at his leisure, retires to a small distance to digest his meal, and then returns to feed again.

The Raven inhabits high rocks on the sea coast, extensive woods, mountains, or open plains, where danger may be seen and avoided. Like the other birds of this genus, the Raven is not particular in his food; but eats indiscriminately small mammalia, birds, or their eggs, reptiles, insects, grain, or carrion; on the sea coast the shore is closely searched for dead fish of any sort, or other animal substance washed up by the tide.

These birds breed very early in the season. By the beginning of February they may be seen visiting and repairing their nest of the previous year. This is usually placed in a very high tree, where the difficulty of the ascent, in some instances, and a superstitious fear "of the Bird of Odin" in others, contribute to allow them to occupy the same spot for many years in succession. Raven trees, as they are called, exist in many different places; and these birds not only live to a great age, but are considered to pair for life. It has been observed that if any accident happens to either of the birds, the surviver quickly obtains another mate; and should both birds be killed, the same locality, from some unknown cause of attraction, is almost certain to be occupied by another pair.

The nest is generally placed in the fork of a branch, and is formed on the outside of sticks, with a lining of wool and hair; the eggs are four or five in number, two inches in length by one inch four lines in breadth, of a pale green ground colour, spotted and speckled with darker greenish brown. Incubation with the Raven lasts twenty days, during which the male feeds the female as she sits upon the nest, and occasionally takes her place upon the eggs; the wants of the young are supplied for a time by the parents with great tenderness and assiduity; but they afterwards drive them from their own haunts when they are able to provide for themselves.

Though possessed of great power as well as courage, the old birds make no defence against any attempt, by men or boys, to rob their nest; but against the attack of other birds, and even very large ones, they defend their eggs or young with great boldness and perseverance. Gilbert White, of Selborne, relates that his brother, the Rev. John White, a very exact observer, had remarked, that a pair of Ravens nesting in the rock of Gibraltar, would suffer no Vulture or Eagle to rest near their station, but would drive them from the hill with amazing fury. On the rocky cliffs of our own coast these birds make their nests very high up. They are observed in different parts of Ireland, in the Hebrides, Orkney, and Shetland.

Southward in Europe, this bird is found from Gibraltar along the northern shores of the Mediterranean Sea. In the Alpine countries of central Europe, it inhabits the wooded mountains during summer, and sheltered valleys in winter. It inhabits Corfu, Sicily, and Crete. In Egypt the Raven, like the Vulture, is not molested; its services in removing offal or putrid flesh being considered useful. It is found over the countries between the Black and the Caspian Seas; Mr. Blyth has found it near Calcutta, and M. Temminck includes it among the Birds of Japan.

Northward in Europe it is found over Scandinavia and on the Faroe Islands; it is found also at Iceland and at Greenland. The Raven was seen by Captain Sir John Parry and his parties, and by our other Arctic travellers, on most, if not upon all the various expeditions to high northern latitudes. Several pairs were seen at Melville Island; the individuals which were killed, differed in no respect from European specimens. In the Natural History Appendix to the Second Voyage, it is stated that the Ravens rob the hunters' traps, and are sometimes caught themselves. Scent offal at a great distance. Pair in March. In the Appendix to the Third Voyage:—Ravens seen at Port Bowen and the most northern parts visited by the Expeditions. During the winter they were frequently observed to have a white ring round their neck, caused by the accumulated encrustations of the vapour of their own breath, and giving them a very singular appearance. Winter produced no effect on their plumage. Captain James Ross, in the Appendix written by him to the account of his uncle's last northern voyage, says, "The Raven is one of the few birds that are capable of braving the severity of an Arctic winter." One poor Raven that had lost a leg either by frost or a trap, visited the ship daily, and his crippled state exciting commiseration, he seldom failed to obtain something in the way of food. Dr. Richardson says of the Raven, "This well-known bird abounds in the fur-countries of North America, and visits the remotest islands of the Polar Seas. It frequents the barren grounds even in the most intense winter colds, its movements being directed in a great measure by those of the herds of rein-deer, musk-oxen, and bisons, which it follows, ready to assist in devouring such as are killed by beasts of prey, or by accident. No sooner has a hunter slaughtered an animal, than these birds are seen coming from various quarters to feast on the offal; and considerable numbers constantly attend the fishing stations, where they show equal boldness and rapacity."

In the United States, Mr. Audubon says, "The Raven is in some degree a migratory bird, individuals retiring to the extreme south during severe winters, but returning towards the middle, the western, and northern districts at the first indication of milder weather. A few are known to breed in the mountainous portions of South Carolina, but instances of this kind are rare, and are occasioned merely by the security afforded by inaccessible precipices, in which they may rear their young.

Our Raven was formerly considered to be an inhabitant of the southern hemisphere, and may exist in some localities; but the Raven of Mexico and the equatorial part of the South American continent is a distinct bird larger than our Raven, with a long and wedge-shaped tail. The Raven of South Africa is also distinct from the European bird, is smaller in size, with a more brilliant metallic lustre on its plumage, and has been named in consequence *Corvus splendens*. The Museum of the Zoological Society contains examples of both these species.

The beak of our Raven is strong and black; the feathers covering the nostrils one inch and a half long, nearly half the length of the beak; the irides brown and grey: the whole plumage black glossed with steel-blue, and purple; the feathers on the throat elongated and pointed, and exhibiting more metallic lustre than those of other parts. Legs, toes, and claws, shining black; the legs and toes strong; the claws considerably curved.

The whole length of a male bird twenty-six inches. The wing from the carpal joint to the end, seventeen inches and one quarter: the first feather four inches shorter than the second; the second one inch shorter than the third; the fourth a little longer than the third, and the longest in the wing: the primaries are narrow and pointed, the tertials broad and rounded. The tail in form rather more than rounded, or slightly angular, the pair of feathers in the middle being the longest.

The female is smaller than the male; and her plumage, as also that of young birds before their first moult, has less metallic lustre.

Mr. Macgillivray in his volumes on British Birds, mentions that he "once saw a Raven in Harris, one of the outer Hebrides, that was patched with white. Another entirely white, was credibly reported to him to have been seen in the Island of Pabbay." The first of these was considered to be identical with the Pied Raven of the Faroe Islands, the *Corvus leucophœus* of authors, but it is considered doubtful whether this Pied Raven is entitled to rank as a species. According to ancient authors, Ravens were formerly white, but were changed to black for babbling. Mr. John Barrow in his 'Visit to Iceland,' says, "This bird was dedicated to Odin, who, as the traditional history of Iceland informs us, had two Ravens, which were let loose every morning to collect intelligence of what was going on in the world, and which, on returning in the evening, perched upon Odin's shoulders, to whisper in his ear whatever information they might have collected; and even now, as we learn from Olafsen and Povelsen, the Icelanders entertain superstitious notions regarding the Raven—they believe this bird to be not only acquainted with what is going on at a distance, but also what is to happen in future." Iceland is said to have been originally stocked with Ravens from the Faroe Islands. Shakespeare alludes to *our* superstitions about the Raven in King Henry VI., Othello, and Macbeth.

The various qualities and powers of voice exhibited by birds in general, and the diversity of structure found to exist in the windpipes or tracheæ of different species in some particular families, have justly excited the attention and remarks of several writers. Descriptions and illustrations of the peculiarities of these parts in some of those species most remarkable for their deviation from the common form will be found in the fourth, twelfth, fifteenth, and sixteenth volumes of the Transactions of the Linnean Society of London.

Among British Birds, the power of imitating the sounds of the human voice is possessed in the greatest perfection by the Raven, the Magpie, the Jay, and the Starling. In proof of this power in the Raven, many anecdotes might be repeated: the two following, derived from unquestionable authorities, are perhaps less known than many others: —"Ravens have been taught to articulate short sentences as distinctly as any Parrot. One, belonging to Mr. Henslow, of St. Alban's, speaks so distinctly, that when we first heard it, we were actually deceived in thinking it was a human voice: and there is another at Chatham which has made equal proficiency; for, living within the vicinity of a guard-house, it has more than once turned out the guard, who thought they were called by the sentinel on duty." — *Fauna Boreali-Americana.* Swainson and Richardson, *Part II. page* 290, *note.*

The advantageous size of the organ of voice in the Raven, and its perfect similarity to those of all our song-birds, induced me to select it in illustration of this subject, although in the quality of its tone there is no resemblance; but it should be borne in mind, that this bird possesses the power of imitating the most difficult of all sounds,—the human voice, for which numerous muscles appear to be necessary. The illustrations here given, are exactly of the same size as the parts themselves will be found in the

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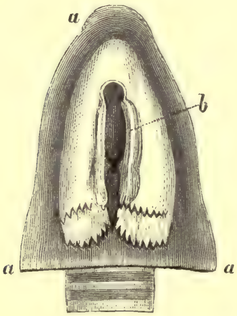

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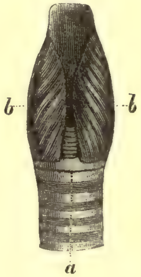

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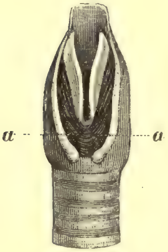

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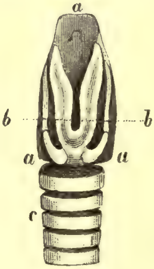

bird, by any one who is inclined to follow me in the examination.

The organ of voice in birds may be considered as consisting of four parts: the glottis, or superior larynx, the tube of the trachea, the inferior larynx, with its muscles, and the bronchiæ ; and the variety of modulation birds in general are known to possess has its corresponding variety of forms and appendages. The glottis, or superior larynx, opens into the mouth at the root of the tongue. The orifice, figure 1, letter *b*, in the first group of illustrations, is long and narrow, encircled by two pair of muscles, figure 2, *b*, *b*, and figure 3, *a*, *a*, which govern the size of the aperture, and constitute one of the accessory means by which the sound of the voice is regulated. Birds have no epiglottis, or covering over this aperture, to prevent any particles of food passing into the windpipe; but the surface near the opening is furnished with numerous papillæ, pointing backwards, which assist in directing and conveying food towards and into the œsophagus.

Figure 1 is a representation of the glottis with its surrounding membranes. Figure 4 is a representation of the cartilages forming the superior larynx, all the softer parts having been removed. The letters *a* refer to the principal cartilage, which, when in its natural situation, lies upon the pharyngeal portion, and between the cornua of the os hyoides, or bone of the tongue. This cartilage appears to perform the double office of the thyroid and cricoid cartilages in the higher animals. In substance it is uniformly thin, its shape nearly triangular when laid flat, one angle placed forward, the lateral angles curving upwards to support the base of the arytenoid cartilage on its own side. The letters *b*, *b*, refer to the arytenoid cartilages, supported at their base by the lateral angles of the cricoid cartilage, before mentioned, and projecting forwards in two narrow and thin parallel processes over two-thirds of the orifice formed by the curved lateral portions of the cartilage underneath: each parallel process forming a slight groove on its superior surface by their edges also curving upwards.

The glottis is closed by a pair of muscles, fig. 3, *a*, *a*, extending from the upper portion of the cricoid cartilage along the two branches of the arytenoid cartilages, upon each outer edge of which they are inserted; and it is opened by a pair of muscles, fig. 2, *b*, *b*, arising from the lateral and posterior portions of the cricoid cartilage, the fibres of which muscles passing over the pair of smaller muscles, just described, are inserted upon the inner edge of each arytenoid cartilage. The obvious use of these two pair of muscles is to govern the size of the aperture.

The tube of the windpipe is composed of two membranes, enclosing between them numerous cartilaginous, or bony rings, forming a cylinder more or less perfect from end to end. Ossification appears to commence in these rings at the front of the trachea, from which point the bone gradually extends equally on both sides towards the œsophagus as the bird increases in age; in particular parts, however, of the tracheæ of some birds, the bony rings are not entirely complete at any age. Various inequalities of size occur, and convolutions in different parts of the same tube, in some species, producing, as might be expected, a particular effect on the voice, to be hereafter explained and figured with the species to which they belong. The length of the tube also requires consideration: thus shrill notes are produced by short tubes, and *vice versâ*; the first are possessed by the Singing Birds, and the reverse by some of the Waders and Swimmers; but the diameter of the tube has also its influence, large tubes producing notes low in the scale of tones, and *vice versâ.* The substance of the tube itself has also to be considered, though some anomalies present themselves. Those birds possessing strong and broad cartilages, or bony rings, have monotonous and loud voices; while the more slender rings, with enlarged spaces between them, allow a freedom of motion, producing a corresponding variety in the scale of tone.

The inferior larynx, the true situation of the organ of voice in birds, as the experiments of Baron Cuvier have

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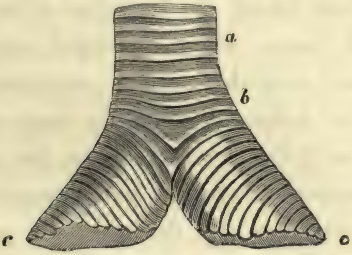

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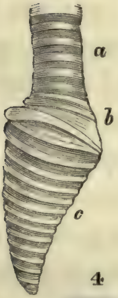

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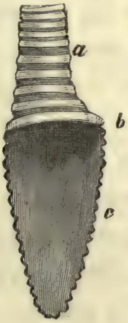

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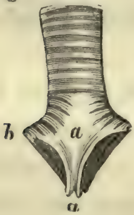

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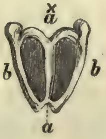

sufficiently proved, is situated at the bottom of the tube, and is formed sometimes by the approximation of several of the lower rings of the trachea more or less firmly ossified together, and occasionally of solid bones; varying in form, being compressed, conical, or triangular at its lower surface, figs. 4 and 5, *a* and *b*, of the second group, having a central crossbone, figs. 4 and 5, *a*, *a*, extending from behind to the front, dividing the orifice into two equal parts; to the outer side of which cross-bone the inner membrane of each bronchial tube is attached. This cross-bone, thus dividing the orifice, forms the point of divarication from which the bronchiæ arise separate, and descend to the lungs. From the upper edge of this cross-bone a semi-lunar shaped membrane, concave on its superior edge, ascends for a short distance the inside of the tube.

The bronchial tubes are formed on the outer sides by membrane interposed between, and connecting a variable number of cartilages which describe only parts of circles, diminishing in size as they approach the lungs, fig. 2, *c*, the circle being completed on the inner side by a delicate membrane stretching from the opposite points of the semi-circular cartilages, fig. 3, *c*, and forming a tube from the orifice of the inferior larynx to the substance of the lungs. This membrane is called by Cuvier the *membrani tympaniformis*, and upon its dilatation and contraction, as well as the power afforded of altering the form and length of the bronchiæ, some of the varieties of intonation depend. The bronchiæ are also slightly attached to each other, and to the œsophagus.

The muscles of the glottis, or superior larynx, are uniformly two pair in all the birds I have examined; but the muscles of the inferior, or true larynx, all largely supplied with nerves, vary in number from one pair to five pair, according to the genus or species, affording a corresponding increase in the various qualities of the voice.

Some few birds have no true muscles of voice at the inferior part of their tracheæ. The Vultures,—some of them at least,—are described as being without any. No. 1 is a representation of the lower portion of the trachea of a Vulture, without muscles, or any true bone of divarication, the bronchial rings almost completing the circle, with little flexibility, and the voice of the bird monotonous. The want of muscles of voice will be more immediately apparent by comparing the representation of No. 1 of the second group of these vocal illustrations, with those of the Raven, with its five muscles on each side, forming the fourth group.

The next division, or those birds possessing but one pair of muscles of voice at the inferior larynx, is by far the most numerous, including as it does most of the *Raptores*, some of the *Insessores*, all the *Rasores*, *Grallatores*, and *Natatores*, with a few exceptions, which will be pointed out. The British species of these orders are the examples more particularly referred to.

The single pair of muscles, when one pair only exist, arise from the whole outer surface of the cricoid cartilage: descending, they form a sheath round the upper part of the tube, afterwards dividing and passing downwards in two equal portions, one on each side uniformly attached to the tube, and not quitting it till arrived at or near the bone of divarication; when separating from the tube of the windpipe, they pass outwards and downwards in distinct slips on each side, to be inserted upon each inner lateral edge of the breast-bone or sternum; third group, figs. 1 and 2, front and side view. This pair of muscles support and strengthen the windpipe, and serve to accommodate the tube to all the varied movements of the

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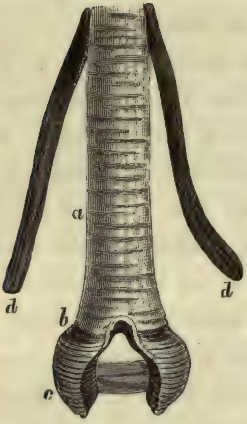

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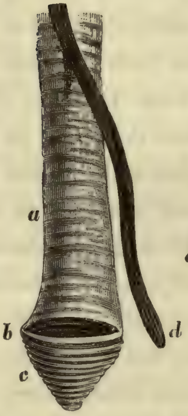

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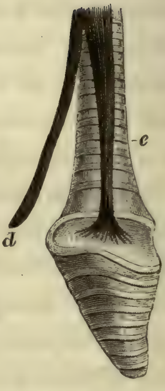

neck: they influence the length of the tracheæ, as well as that of the bronchiæ, and on account of their place of insertion have been named sterno-tracheal. This pair of muscles sometimes send off a small slip towards the bottom, which is inserted upon the inner surface of the bone called the merry-thought, or forked bone, and have been named in consequence furculo-tracheal; but this division does not appear to afford any additional powers of voice. In figures 1 and 2, letters *a a* refer to the tube; *b b* to the point of division, or bone of divarication; *c* to the bronchia, and *d* to the elongated muscles going off to be attached to the sternum. Another example of two pair of muscles at the inferior larynx is found in the family of the Pigeons, as represented in the third figure of this third group. The second pair in this instance, marked *e*, are formed of a portion of the sterno-tracheal muscles, but taking a different direction. They proceed by a narrow slip, from that point upon the tube where the first pair of muscles go off to be inserted upon the sternum down the side of the trachea, to be attached externally to the membrane between the lowest ring of the tube, and the first ring of the bronchia, as shown in the side view before referred to. By their contraction they shorten the flexible portion of the tube between their points of attachment, and produce tension upon the *membrana tympaniformis.*

Among British Birds I have found no examples with three pair, or four pair of muscles, at the inferior larynx; I proceed, therefore, to the consideration of the most complex organ,—that furnished with five pair.

The birds included in this division are all those of the family of the Crows, the Starling, the Thrush tribe, the Warblers, Larks, Buntings, Finches,* Swallows, &c., the organs of voice in which vary only in size. In birds possessing powers of song, or imitation, the tube of the trachea is nearly uniform in shape throughout, the bronchiæ long in proportion, and both parts perfectly flexible. The fourth group here introduced exhibits, fig. 1, a front view—fig. 2, a back view—and fig. 3, a side view—of the lower portion of the trachea and its muscles in the Raven, which may be considered the type of this form, and from its size admits of clear explanation. Figures 2 and 3 of the second group, page 69, exhibit an outside and an inside view of the same part, but divested of its muscles, to show by the prevalence and interposition of membrane, the degree of alteration the various muscles are able to effect.

Referring again to the fourth group, on the opposite page, the pair of muscles which descend on the outside of the trachea, divide at a short distance above the end of the tube, and one portion is directed in continuation downwards and backwards, to be inserted upon the extreme posterior

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* The Canary is a true Finch, possessing, like the best Song Birds, five pair of true muscles of voice, and hence arises its power of imitating other sounds, as evinced in the Canary, which has for some time past formed an interesting subject of exhibition in London.

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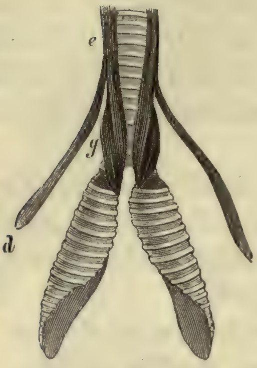

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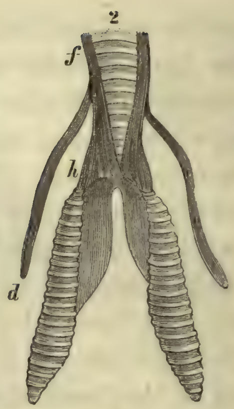

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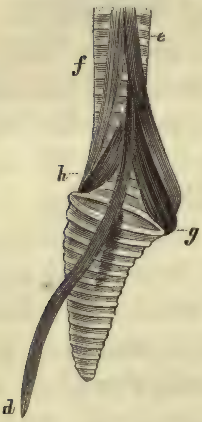

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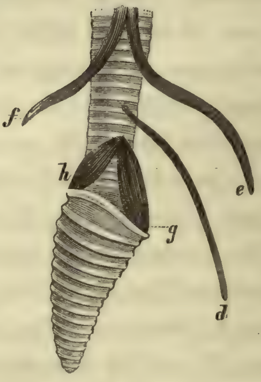
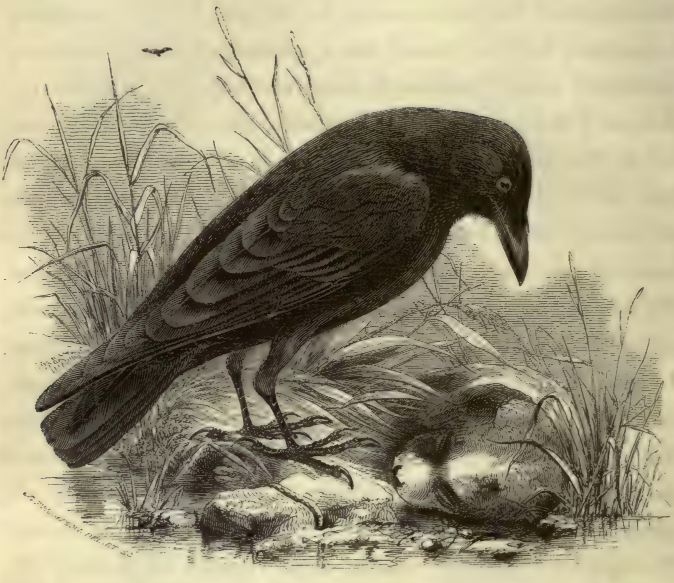


end of the first bone of the bronchia, and is marked *f*. Its counterpart passes from the place of separation downwards and forwards to be inserted below the extreme point of the last bone of the tube, and is marked *e*. Within the angle formed by the separation of these two muscles, a third slender and cord-like muscle arises, which goes off to be inserted upon the sternum, as in those birds having one pair; these are marked *d*. The fourth muscle, marked *h*, is the shortest of the five. It arises near the centre of the bottom of the tube, and its fibres, directed obliquely backwards and downwards, are inserted by tendon upon the extremity of the first half-circular bone. The fifth muscle, marked *g*, arises also from the centre of the tube, similar to the last, but is something longer and thicker, having the appearance of being made up of several small muscles in close contact. Its direction is obliquely downwards and forwards, its substance in part hid by the muscle marked *e*, and it is attached by a broad base to the last bony ring of the tube, to the cartilaginous projection immediately below, and sends one portion to be inserted upon the extreme end of the first bronchial bone. Figure 4 represents these five muscles, three of them being partly detached to render them more obvious by separation. I have called these four muscles the long and short, anterior, and posterior tensors: the muscle marked *d*, from its insertion upon the sternum, may still retain the name of sterno-tracheal. Thus, it will be seen, the lungs govern the quantity of air, as well as the force with which it is sent through the trachea, while these muscles influence the diameter, and the length of the bronchial tubes. The principle upon which the organs of voice in birds is founded is that which prevails in wind instruments generally; the notes in the ascending scale being produced by a corresponding contraction of the diameter, or the length of the tube, and *vice versâ*. It may, perhaps, be objected, that the utmost extent of motion which birds appear to have the power of exercising over the different parts of their organ of voice, seems insufficient to account for the effects produced; but it may in answer be urged, that the closest examination, or most scientific demonstration of the chordæ vocales and muscles in man, with all the auxiliary appendages, afford but an imperfect illustration of the varied and extraordinary powers of the human voice.

INSESSORES. *CORVIDÆ.*



THE CARRION CROW.

Corvus corone.

Corvus corone,	*The Carrion Crow,*	Penn. Brit. Zool. vol. i. p. 281.
„ „	„ „	Montagu, Ornith. Dict.
„ „	„ „	Bewick, Brit. Birds, vol. i. p. 87.
„ „	„ „	Flem. Brit. An. p. 87.
„ „	„ „	Selby, Brit. Ornith. vol. i. p. 349.
„ „	„ „	Jenyns, Brit. Vert. p. 145.
„ „	„ „	Gould, Birds of Europe, pt. xviii.
„ „	*Corneille noir,*	Temm. Man. d'Ornith. vol. i. p. 108.

The Crow, or Carrion Crow as it is more frequently called, may be considered a Raven of small size, resembling the bird last described in all but its bulk, while it is immediately distinguished from the Rook by its beak, its voice, and its habits.

Like the Raven, the Crows keep in pairs all the year, and more than two are seldom seen together, unless assembled over a carcase.

The partiality of this species to animal diet has caused it to be called Flesh Crow and Gor Crow, or Gore Crow; and in those countries where large flocks of sheep are maintained, the Crow is a lurking and dangerous enemy. They live mostly in woods, or in wooded countries, taking extensive flights in search of food, while their power of vision, and the elevation at which they proceed, afford them a wide field of view. They destroy weak lambs and small quadrupeds,—such as leverets, and young rabbits,—and the young also of feathered game and poultry; they have been seen to kill pigeons. "A Carrion Crow was observed to steal a young duck, which it pounced upon while in a pond, and carried it off in his bill. The Crow did not drop the duck in order to kill it, but laid it down on the ground, walking backwards and forwards, and treading upon it until it was dead, when it was taken to the nest." Another observer states that while looking at "an old sparrow enticing forth its young ones, a Crow pounced upon it, held it between its claws, and instantly tore it in pieces, as would a bird of prey. When the meal was completed, it began its hoarse note, and flew off in search of further food." A. E. Knox, Esq., says the Crow eats the freshwater muscle, and on the coast it picks the soft parts out of dead shell fish, or eats such other refuse as it can find. In default of any sort of animal matter, which it appears greatly to prefer, it will feed on grain, or potatoes, and sometimes on green walnuts. It is observed, like the Raven, and other birds of this family, to hide superfluous food.

Haydn, in his Dictionary of Dates, says, "that an Act was passed (24th Henry VIII., 1532,) for the destruction of Crows in England, which breeds more of them than any other country in Europe."

The Crow is an early breeder, like the other species of the genus *Corvus*, beginning to build or repair its nest in the month of February. The nest is generally placed in a forked branch of a tree ; the outside is framed of sticks and twigs, with a plentiful lining of wool and hair, or other soft material : the eggs are usually four or five in number, of a pale bluish green, spotted and speckled with two shades of ash colour and clove brown ; the length of the egg one inch eight lines, by one inch two lines in breadth. The male feeds the female while she remains upon the eggs, and both defend their young with great courage against birds much larger than themselves. According to Mr. Macgillivray, if the male be killed, the female soon gets another mate. In countries where the Carrion Crow is not numerous, it has been known to pair with the Hooded Crow ; and some instances of this, and of some other birds also, that in a wild state have been known to pair with birds that were not of their own species, will be noticed in the history of the Hooded Crow, which immediately follows.

The Carrion Crow is found throughout England. In Ireland, Mr. Thompson informs me, it frequents the sea coast chiefly through the northern parts. In Scotland it is also found ; but diminishes in number as you approach the northern extremity. Müller includes the *C. corone* in the Birds of Denmark ; but M. Nilsson says it is rare in Sweden, and according to Oedman it does not go to the northward of Nordkopin. It is found in Norway, on the Faroe Islands, and at Iceland. The Crow of the United States of America is a different species.

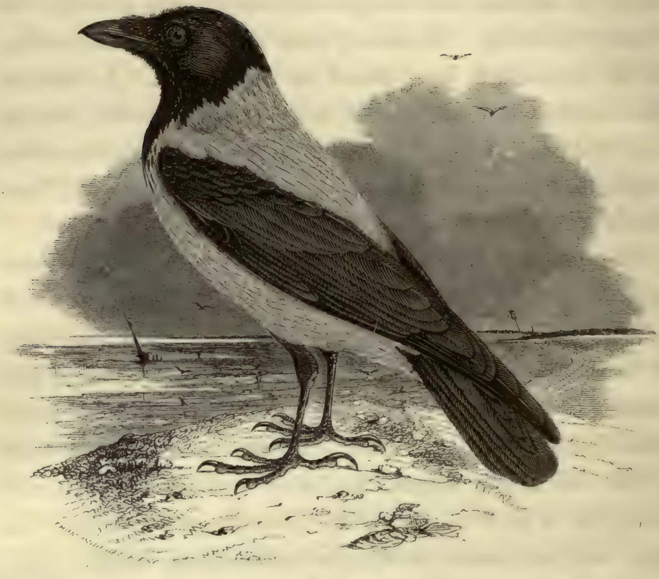
Southward in Europe, it is found in Germany, France, Spain, Provence, and Italy; inhabiting the woods from spring to autumn, and the plains from autumn through the winter to spring. It is very rare in Sicily, but according to M. Temminck it is found in the Morea. A Russian Naturalist, whose name has been already quoted, has included it as inhabiting the country south of the Caucasian range, between the Black and the Caspian Seas. M. Temminck says it is also found in Japan.

The beak of this bird is black, the nostrils and basal third covered by feathers directed forwards; irides dark brown; the whole of the plumage entirely black, like that of the Raven; the upper parts reflecting tints of violet and green in particular lights; the tail shorter in proportion than that of the Raven; the tail-feathers broad; the form of the tail nearly square, the outer feathers on each side being but a little shorter than those in the centre. The legs, toes, and claws, strong, and of a shining black.

The whole length of the bird described eighteen inches and a half. From the carpal joint to the end of the wing thirteen inches and a half: the first feather three inches shorter than the second; the second one inch shorter than the third; the third and fourth nearly equal, and the longest in the wing.

Females, and the young birds of the year before their first moult, have less metallic lustre on the upper surface of their plumage than adult males.

INSESSORES. *CORVIDÆ.*



THE HOODED CROW,

OR, ROYSTON CROW.

Corvus cornix.

Corvus cornix,	*The Hooded Crow,*	Penn. Brit. Zool. vol. i. p. 286.
” ”	” ”	Montagu, Ornith. Dict.
” ”	” ”	Bewick, Brit. Birds, vol. i. p. 89.
” ”	” ”	Flem. Brit. An. p. 87.
” ”	” ”	Selby, Brit. Ornith. vol. i. p. 351.
” ”	” ”	Jenyns, Brit. Vert. p. 146.
” ”	” ”	Gould, Birds of Europe, pt. xii.
” ”	*Corneille mantelée,*	Temm. Man. d'Ornith. vol. i p. 108.

The Hooded, or Royston Crow, in its form, as well as in its habits, resembles the Carrion Crow; it is even said to be more mischievous. In the southern parts of this country it is, however, only a winter visiter, arriving from the North early in October, and departing for the North again in April. In the western and northern parts of Scotland, in the Hebrides, the Orkney and Shetland Islands, this bird is resident throughout the year; and Mr. Selby observes, that "as he has been assured, from the most authentic information, that in those districts of Scotland where they abound, there is no visible diminution of their numbers during the winter months," the inference seems to be that the greater part of those which visit England come from Sweden, Norway, and other countries situated to the north-east, this opinion being strengthened by the fact of their generally arriving with the first flight of Woodcocks, which birds always take advantage of a north-eastern breeze for their journey. The Royston Crows, on their appearance in this country, frequent marshes near the sea, the banks and shores of tide rivers, inhabiting both sides of the Thames as high up as within a few miles of London; and when inland these birds frequent champagne countries and open downs.

This species is sometimes called the Royston Crow as well as the Hooded Crow, and I believe that Royston Crow is the older name of the two. Merrett, Willughby, and Ray, use the name Royston Crow only; the two latter authors quoting Royston and Newmarket Heath as the localities for this bird in winter. That it is abundant about Royston from October to March I can testify on my own knowledge; its boldness, the contrast in the colours of its plumage, and the open character of that country, assist in rendering this bird very conspicuous, and we shall be as correct in referring to it by the name of Royston Crow, as we are in speaking of the Iceland Falcon, the Dartford Warbler, and many other birds named in reference to certain localities in which they are constantly found.

These birds usually appear in small parties except when food is to be obtained; and so destructive are these Hooded Crows to young lambs, eggs, or poultry, that in the Orkney and Shetland Islands, where they are numerous, rewards at the rate of twopence for every Crow were paid by the local authorities up to so late a period as the year 1835, in consequence of which many were annually destroyed. On the coast they feed upon sand-worms, shell-fish, and almost any marine production. Mr. Selby says, "I have repeatedly observed one of these birds to soar up to a considerable height in the air, with a cockle or mussel in its bill, and then drop it upon the rock, in order to obtain the included fish." Dr. Fleming, in his Philosophy of Zoology, considers instinct, in this degree, as bordering closely upon intelligence, as implying a notion of power, and also of cause and effect. May not such an act be referred to knowledge gained by experience?

When removed from the vicinity of the sea shore, or the banks of tide rivers, these birds seek the same sort of food as the Carrion Crow, preferring animal substance of any kind, seldom resorting to any vegetable production unless driven to it by stern necessity. Their voice is more shrill than that of the Carrion Crow; but they are said to vary their tone occasionally, producing two cries, the one hoarse, the other sharp.

So numerous are these birds on some of the western islands of Scotland, that a flock of them were seen feeding on shell-fish on the east coast of Jura, after a violent storm, which did not contain less than five hundred, and not a single black Crow among them. Mr. Salmon, in his observations made during three weeks' sojourn in Orkney, says, "We found the Hooded Crow in tolerable plenty; not associating together in communities, but, like the Crow, preferring to build their nests separately. These are placed among the rocks, and upon the sides of the deep chasms that are to be found upon the sides of the hills; generally upon the ledge of a rock, among the overhanging heather. The outside of the nest is composed of withered heather, and large roots or stalks, and it is lined with wool and hair. In one nest that we looked into, we found three young ones, and they were almost in full plumage, which had precisely the same colours as that of their parents." Mr. Hunt, of Norwich, in his History of British Birds, says he was told by good authority that a pair of these birds had built a nest, and reared their young, during the season of 1816 in the neighbourhood of King's Lynn, and there is good reason to believe that this species reared its young in the vicinity of Yarmouth in the season of 1843.

Mr. W. C. Williamson, Curator to the Natural History Society, Manchester, in his notes on the appearance of rare Birds in the vicinity of Scarborough, as printed in the Proceedings of the Zoological Society for the year 1836, says, "The Hooded Crow has been known to breed near Scarborough on two or three occasions. In one instance, a female Hooded Crow was observed to pair with a Carrion Crow on a large tree at Hackness, where they succeeded in rearing their young. The Carrion Crow was shot by the gamekeeper; but the following year the Hooded Crow returned with a new mate of the same sable hue as the former one to her old nest. The Carrion Crow and the young Crows were again all shot; the old female by her vigilance escaped all the efforts of the keepers to destroy her, and a third time returned with a fresh mate; she was not, however, again so successful, but was shot, and is now preserved in the Scarborough Museum. The young birds varied, some resembling the Hooded and others the Carrion Crow in their plumage." Mr. Selby, in his address to the Berwickshire Naturalists' Club in September 1834, mentions, on the authority of Mr. Armstrong, that a Hooded Crow had in the previous spring paired with a Carrion Crow at Fowberry, where it was killed from the nest, containing eggs. Examples of a similar nature, Mr. Selby observes, have also been known to occur in Dumfries-shire by our colleague Sir William Jardine; and Temminck remarks, that in the northern countries of Europe, where the *C. corone* is rare, a mixed breed is sometimes produced between it and the *C. cornix*. A correspondent in the Field Naturalist thus relates the result of his own observations on the same subject:—"For four successive years I had opportunities of witnessing the pairing of the Carrion Crow and the Hooded Crow on some large beech trees which surrounded my house in Forfarshire. They never reoccupied the old nest, nor did they always build their nest on the same tree; nor was I positively certain that it was the same individuals who returned every year to these trees, though it is probable they were, for they were never molested. Knowing the predatory propensities of the Carrion Crow on hen's eggs, young chicks, and even turkey poults, I would have shot them had they been a pair of Carrion Crows; but I was anxious to watch the result of what appeared to me at the time a remarkable union. Judging from the manners of the two birds, the almost constant incubation, and carefulness exhibited, I should say that the Hooded Crow was the female, though the Carrion Crow did frequently sit upon the eggs. After the young of the first year took wing, I perceived that the one was a Carrion and the other a Hooded Crow, and this distinctive character was maintained in the young which were hatched every year, as long as I remained in that part of the country. I shot the first young pair, and ascertained that the Hooded one was the female, and the Carrion was the male, which confirmed me in my conjecture of the sexes of the parents. Ever after young and old were unmolested by me; but, notwithstanding the increase of number every year after the first one, only one pair came annually to build on these beech trees." Another remarkable instance is noticed in Mr. Atkinson's Compendium of the Ornithology of Great Britain, page 30, where a male of the Hooded Crow paired with a female of the Carrion Crow at Aroquhar, on Loch Long, and this singular attachment had subsisted three or four years; their nest was like that of the Carrion Crow, in the fork of a tall pine, and the young brood had already flown; but the party were unable to procure one of them, or to ascertain which of the parents they most resembled. In further proof of birds in a wild state sometimes pairing with others not of their own species, I may quote a letter received from R. H. Sweeting, Esq., of Charmouth, stating that a keeper brought him a pair of Harriers, genus *Circus*, which he had just shot together at their nest in a furze brake, in the act of feeding their young, the female of which proved to be a ring-tail, and the male an example of Montagu's Harrier. Another instance is recorded in the seventh volume of the Magazine of Natural History, page 598, by Mr. Henry Berry, in the following terms. With respect to the Thrush, I recollect a singular case: in the garden of James Hankin, a nurseryman at Ormskirk, in Lancashire, a Thrush and a Blackbird had paired: this was well known to a number of individuals, myself among them. During two successive years the birds reared their broods, which were permitted to fly, and evinced, in all respects, the features of strongly-marked hybrids. Several instances are known in which the female of the Black Grouse, usually called the Grey Hen, has bred in a wild state with the Common Pheasant; and hybrids between the Pheasant and Domestic Fowls, are frequently produced. The Common Goose, in a state of domestication, has produced young with the Chinese Gander, as recorded by T. C. Eyton, Esq.; and the Wild Duck has bred with the male Pintail at Belvidere, as communicated to the Zoological Society by Lord Saye and Sele.

Several experiments on the productive powers of various hybrid birds are now in progress; but, without intending to anticipate the interesting particulars which may be elicited, I may briefly refer to what has fallen under my own observation. Some degree of restriction, either accidental or imposed, and arising from various causes, appears to be necessary to induce the union of birds that are of different species; but the influence of the Divine command to increase and multiply is so irresistible, that some birds unite with strange partners, rather than have no partner at all; when putting two birds of different species together, with the intention of breeding from them, union is less likely to take place if they are kept within sight or hearing of other birds of their own species. The two sexes of the broods produced by such unions take little or no notice of each other when adult, even during the usual breeding-season, and are believed to be unproductive among themselves if so restricted; but if allowed an opportunity of uniting with the true species of either parent, they are then prolific, and the young birds produced soon lose all intermediate character.

The Hooded Crows, like the other Crows, are early breeders, making their nest upon trees, in those countries where trees are found, in default of trees they build on marine rocks and cliffs: the nest is formed of sticks and straw, lined with wool and hair; the eggs from four to six in number, mottled all over with greenish brown on a light green ground; the length one inch ten lines, by one inch three lines in breadth.

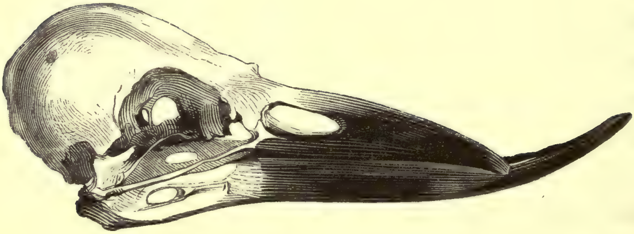
In addition to the localities already quoted, the Hooded Crow is indigenous in the northern parts of Ireland. North of the islands of Scotland, it is common in Denmark, Sweden, and Norway, breeds in considerable numbers on the Faroe Islands, and is found at Iceland; it is found also in Russia and Siberia, but not beyond the Lena. It is said to breed in Germany; and is common during winter on the coast of Holland. In the southern parts of Europe, this bird inhabits the plains from autumn to the spring, and the mountains that are wooded from the spring to autumn. It is found at Corfu, Sicily, and Crete. Mr. H. Strickland observed that it was common at Smyrna; it is found in the Grecian Archipelago; and it inhabits the country between the Black and the Caspian seas. M. Temminck includes it in his Catalogue of the Birds of Japan; and Sonnerat records it as inhabiting the Phillippine Islands.

Beak strong, like that of the Raven, two inches long, and shining black, the basal half covered with projecting feathers, which entirely hide the nostrils; the head, cheeks, throat, and neck in front, shining bluish black; wings and tail the same; nape of the neck, back, rump, and all the under surface of the body smoke grey, the shafts of the feathers dark slate grey; legs, toes, and claws, shining black.

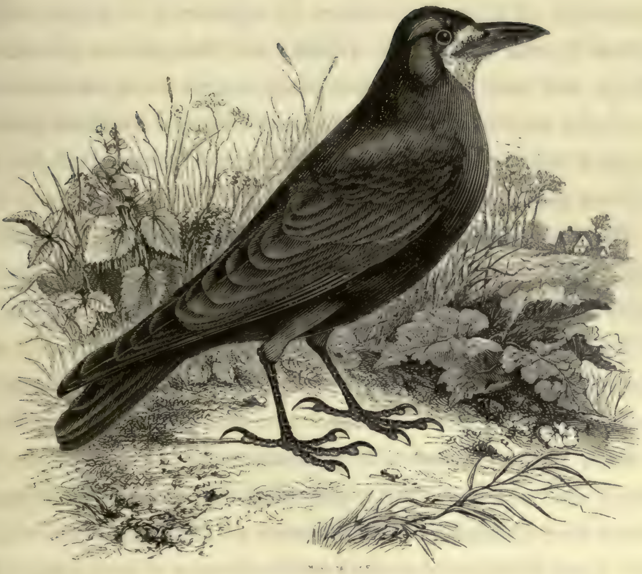
Whole length of an adult male twenty inches. Wings from the carpal joint to the end of the quill-feathers thirteen inches: the first feather three inches shorter than the second, which is one inch shorter than the third; the third but little shorter than the fourth, which is the longest in the wing.

Females are smaller than males, and the grey portions of the plumage are tinged with brown. Young birds resemble their parents in having their plumage grey, as mentioned on the authority of Mr. Salmon.

The vignette below represents an accidental malformation in the beak of a Rook, for the opportunity of figuring which I am indebted to T. C. Heysham, Esq., of Carlisle.



INSESSORES. *CORVIDÆ.*



THE ROOK.

Corvus frugilegus.

Corvus frugilegus,	*The Rook,*	Penn. Brit. Zool. vol. i. p. 283.
" "	" "	Montagu, Ornith. Dict.
" "	" "	Bewick, Brit. Birds, vol. i. p. 91.
" "	" "	Flem. Brit. An. p. 88.
" "	" "	Selby, Brit. Ornith. vol. i. p. 353.
" "	" "	Jenyns, Brit. Vert. p. 146.
" "	" "	Gould, Birds of Europe, pt. xiii.
" "	*Le Freux,*	Temm. Man. d'Ornith. vol. i. p. 110.

The Rook, says Pennant, is the *Corvus* of Virgil, no other species of this kind being gregarious. The Poet seems to have been partial to these birds, bringing them into notice on many occasions, and describing very naturully the evening return to their nests. Rooks are at once distinguished from the other species of this family, already described, by their habits of constantly living in flocks together at all seasons of the year, and further evincing the sociability of their dispositions by appearing to prefer situations in the immediate vicinity of the abodes of man. There are not wanting instances where long-established rookeries near a mansion have been deserted by these birds, when it has happened that the house has been pulled down, or even abandoned as a habitation.

Their partiality to building their nests on any trees sufficiently lofty, that are occasionally to be found in various parts of crowded cities, must have been observed, not only in London, but elsewhere. In the spring of 1838, a pair of Rooks began to form a nest on the crown which surmounts the vane of St. Olave's church, in Hart Street, Crutched Friars; many persons will remember the nest built on a single and not very lofty tree near the corner of Wood Street and Cheapside, in the season of 1836, and two nests have been built and occupied in the present year, 1845. A few years since a pair built their nest between the wings of the dragon of Bow Church, and remained there till the steeple required repairs. In the gardens of two noblemen in Curzon Street, May Fair, a considerable number of Rooks have built for many years, and these probably received an addition at the destruction of the rookery in the gardens of Carlton House. Mr. Blackwall has recorded in the Zoological Journal, that three pairs of Rooks built on some low black Italian poplars in a central part of the town of Manchester, and returned to the same place the following year. Mr. Bewick has noticed the nest of a pair of Rooks which was built on the top of the vane of the Exchange in Newcastle-upon-Tyne; and though the nest and its inhabitants were turned about with every change of wind, it was tenanted for ten successive seasons till the spire was taken down; and Mr. Macgillivray mentions that Rooks build every year in the heart of the city of Edinburgh.

Rooks are supposed to exhibit a degree of sagacity unusual in birds, in selecting or avoiding certain trees. "At an old mansion, not far from London, surrounded by a number of very fine elms, a singular mark of the sagacity of Rooks was recently observed. Many of these trees had become very old, and it was therefore determined to fell a few of them every year, and plant young ones in their place. The oldest of the trees were accordingly condemned to be felled, and a portion of the bark taken off to indicate those which were to come down. These trees were soon forsaken by the Rooks, and it was subsequently observed that immediately after any of the other elms were marked in a similar manner, the Rooks at once forsook the trees, as if fully aware that the removal of the bark was a notice for them to quit." Another instance is thus noticed:—"Mr. Wingate, steward to Mr. Templer of Lindridge, remarked in various years, that certain trees were not built upon by the Rooks; if one nest were built, the others destroyed it; and he invariably found that such trees were decayed, and were generally blown down during some storm." I am disposed in these cases to believe that the age, or incipient decay of the trees, had produced its effect on the upper branches, and that the Rooks found these twigs less fit for their purpose than those of more healthy trees which were close by.

The balance between injury or benefit derived from Rooks by the agriculturist is a question which general opinion seems to have settled, by considering that the occasional injury is much more than counterbalanced by the amount of benefit conferred in the consumption of thousands of destructive grubs of the common cock-chaffer, the wire-worms of several sorts, and, as mentioned by Mr. Selby, the larvæ also of the insect commonly known by the name of harry-long-legs; these, and probably many others equally injurious to vegetation, are searched for and devoured with avidity, forming a very large proportion of the food of this most numerous species. Early in the morning Rooks visit meadow land while the grass is yet wet with dew, to break their fast on worms and slugs, which the moisture of that period induces to crawl forth. Later in the day, they may be seen either searching newly-ploughed ground for the various insects there exposed, or again visiting pastures for other purposes. There they are accused of destroying the grass by pulling it up by the roots; "but it has been stated, and I believe truly, that this is an error arising out of the following circumstance:—In searching for grubs which are concealed in the earth, and supported by eating the roots of the grass, the Rook pulls at the blade of grass with its bill, and when the grass comes up readily, the bird knows that there are under it insects which have destroyed its roots, and in this way detects them; but if the blade of grass is firm, the Rook goes to another part of the ground. In a field where grubs are very abundant, the Rooks scatter the grass everywhere, so as to give the appearance of having rooted it up, while they have only exposed the depredations of the insects by which the roots have been destroyed." The author of the Journal of a Naturalist, speaking of the readiness with which Rooks detect the places where grubs are sure to be found, says, "I have often observed them alight on a pasture of uniform verdure, and exhibiting no sensible appearance of feathering or decay, and immediately commence stocking up the ground. Upon investigating the object of their operations, I have found many heads of plantains, the little autumnal dandelions, and other plants, drawn out of the ground, and scattered about, their roots having been eaten off by a grub, leaving only a crown of leaves upon the surface." It may readily be supposed that extensive injury at the root of a plant cannot exist long without some alteration in the appearance of the leaves, or other parts, above ground, and the Rooks seem to have learned by experience how to select those plants which are the most likely to afford them some recompence for the trouble they take in grubbing them up. Mr. Jesse, in his instructive Gleanings, says, "A gentleman once showed me a field which had all the appearance of having been scorched, as if by a burning sun in dry hot weather. The turf peeled from the ground as if it had been cut with a turfing-spade, and we then discovered that the roots of the grass had been eaten away by the larvæ of the cock-chaffer, which were found in countless numbers at various depths in the soil. This field was visited by a great quantity of Rooks, though there was no rookery within many miles of the neighbourhood, who turned up, and appeared to devour the grubs with great satisfaction." To prove their utility on other occasions, two or three quotations from the Magazine of Natural History, among many others, will suffice. A flight of locusts visited Craven, and they were so numerous as to create considerable alarm among the farmers of the district. They were, however, soon relieved from their anxiety, for the Rooks flocked in from all quarters by thousands and tens of thousands, and devoured them so greedily that they were all destroyed in a short time. It was stated a few years ago, that there was such an enormous quantity of caterpillars upon Skiddaw, that they devoured all the vegetation on the mountain; and people were apprehensive they would attack the crops in the enclosed lands; but the Rooks, which are fond of high ground in summer, having discovered them, in a very short time put a stop to their ravages.

The attempts occasionally made by man to interfere with the balance of powers as arranged and sustained by Nature are seldom successful. "An extensive experiment appears to have been made in some of the agricultural districts on the Continent, the result of which has been the opinion that farmers do wrong in destroying Rooks, Jays, Sparrows, and, indeed, birds in general, on their farms, particularly where there are orchards. In our own country, on some very large farms in Devonshire, the proprietors determined, a few summers ago, to try the result of offering a great reward for the heads of Rooks; but the issue proved destructive to the farms, for nearly the whole of the crops failed for three successive years, and they have since been forced to import Rooks, and other birds, to restock their farms with." A similar experiment was made a few years ago in a northern county, particularly in reference to Rooks, but with no better success; the farmers were obliged to reinstate the Rooks to save their crops. The subject was facetiously commented upon in a pamphlet by James Stuart Menteath, Esq., of Closeburn.

Mr. Jesse, in the second volume of his Gleanings in Natural History, makes the following remark on this subject. "In order to be convinced that these birds are beneficial to the farmer, let him observe the same field in which his ploughman and his sower are at work. He will see the former followed by a train of Rooks, while the sower will be unattended, and his grain remain untouched."

The food of the Rook, as already shown, consists principally of worms and various sorts of insects, which, from the numbers of the birds themselves, must be consumed to an enormous extent. During the farmer's seed time, if other food is scarce, the newly-sown grain requires to be watched to keep the Rooks away; they will also occasionally steal a few cherries, or green walnuts, and in severe winters peck holes in turnips or potatoes. There is reason to believe that the visits of Rooks to turnips may be in some degree beneficial. Farmers have suffered great injury of late years, particularly in Hertfordshire and Essex, from the attack of a large brown grub, the larva of a very common grey moth, called the corn rustic, *Agrotis segetum* of entomologists; from four to seven of which I have known to be found eating their way into the bulb of one turnip.

The Rook inhabits wooded and cultivated districts. As early in the year as the month of February these birds are seen to visit their nests of the preceding year, which are usually placed thickly together in the tops of tall trees, sometimes to the number of seven or eight nests on the same tree, and generally selecting such trees as have been planted to form avenues, or otherwise ornamental as timber, and in the vicinity of inhabited mansions, or other buildings. In March, and usually about the second week of that month, the Rooks begin to repair the nests for their use, and some new nests are built by the young birds of the previous year. These are formed of twigs, and lined with grass and fibrous roots. While the nests are in progress, considerable clamour prevails at times among the birds, which appears to arise from attempts made to rob one another of the materials employed in building; and it is observed that while a nest is in progress, one of the feathered proprietors remains near it to guard it against intruders, and its mate fetches whatever may be next wanted to proceed with; it has also been repeatedly noticed, that if a pair of

Rooks attempt to build their nest in a tree that was previously unoccupied by a nest, and at a distance from the main body, the other Rooks invariably destroy the nest. The reason for this is not very obvious, unless intended as a punishment to the separatists for their want of sociability. The Rook lays four or five eggs, of a pale greenish ground colour, blotched over with dark greenish brown; the length one inch eight lines, by one inch two lines in breadth.

During the period of incubation, the male feeds the female constantly, and occasionally takes her place upon the eggs. Both birds labour incessantly to support their young when hatched, and may be seen, early and late, collecting food for them in the various modes already described, the dilatable skin under the tongue distended with a conspicuous mass, which is thus softened, and rendered suitable to young and delicate organs. The young Rooks are able to fly by the end of May, or the beginning of June, and follow their parents to grass-fields, where they are still fed for a time, but soon learn to select and obtain sufficient for their own subsistence. The nest trees are in some cases deserted from this time, and all the inhabitants of the rookery roost together in some neighbouring wood, from whence at an early hour they repair in flocks to their feeding-ground, returning together with slow and measured flight in the evening. Whenever the main body are feeding, or otherwise engaged on the ground, two or three individuals are generally seen posted, like sentinels, in trees close by, whose note of caution or alarm appears to be perfectly understood by the rest, and surprise or danger avoided apparently by a concerted understanding among them.

Besides the general hatch which takes place in April, a few young broods are produced late in the autumn. Gilbert White of Selborne, in his unpublished MSS. referred to by Mr. Jesse, mentions a Rook's nest, with young ones in it on the 26th of November. Charles Anderson, Esq., some time since wrote me word, that in 1817 a pair of Rooks had a nest with eggs in a tall elm at Lea, near Gainsborough, so late as the month of November. E. H. Rodd, Esq. of Penzance, has also sent me word that at his father's residence in Cornwall, Rooks built their nests, and hatched young birds, in a warm sheltered valley near the house, in November 1836, and in November 1844, a pair of Rooks built a nest and produced their young on the outer branch of an old elm-tree, near the Park entrance to Broughton Castle, Oxfordshire, as recorded by F. Wyatt in the Zoologist for March 1845.

Rooks, like some others of the Crow tribe, have been occasionally tamed, and learnt to perform many amusing tricks, becoming greatly attached to those who fed and protected them. Mr. Hewitson has heard the Rook imitate the note of the Jackdaw. Mr. Macgillivray mentions having repeatedly heard one "that imitated so remarkably well the barking of several dogs in the village that, had it been placed out of view, it would have been impossible to have discovered the deception;" and adds besides, that when making a visit of observation to a rookery, he was surprised to hear several Rooks uttering a variety of soft, clear, modulated notes, very unlike their usual cry. "In the intervals," it is observed, "I could distinguish the faint shrill voice of the newly hatched young, which their mothers, I felt persuaded, were fondling and coaxing in this manner. Indeed the sounds were plainly expressive of affection, and a desire to please." The numerous muscles already described as belonging to all the species of the Crow tribe, sufficiently account for the powers here manifested by the Rook.

This bird is probably nowhere more common than in England and Ireland; but decreases in numbers as you proceed northward in Scotland, and is not found in Orkney or Shetland. A few are observed in Denmark, the southern part of Sweden, Russia, and northern Asia. It is said to be somewhat migratory over part of the European continent, and is not found in Guernsey or Jersey, though observed occasionally to fly across the Channel from this country. It is found in Corfu, Sicily, and Malta, but does not remain all the year. It has been found also in the range between the Black and the Caspian seas; and M. Temminck says it is an inhabitant of Japan.

The anterior part of the beak shining black; the basal part of both mandibles, as well as the skin under the tongue and on the throat, naked of feathers, scabrous, and warty, and this is the most obvious external distinction between the Rook and Carrion Crow; the irides dark brown; the whole of the plumage black, glossed with purple, in adult birds, particularly over the neck and back; under surface of wing and tail-feathers greyish black. Legs, toes, and claws, shining black.

The whole length of the adult male described was nineteen inches and a half; from the carpal joint of the wing to the end of the longest quill-feather, twelve inches and one quarter; the first feather three inches shorter than the second; the second one inch shorter than the fourth, which is the longest in the wing; the third is as much shorter than the fourth as it is longer than the fifth.

The female is frequently, in her whole length, two inches shorter than the male, and has less brilliancy in the plumage.

Young birds of the year resemble the adult female; but the feathers at the base of the beak, projecting forward over the nostrils, are not replaced after the first moult, and two or three other birds (not British) are now known to exhibit this peculiarity, which has been considered specific.

White, pied, and cream-coloured varieties of the Rook sometimes occur. Mr. Hunt, of Norwich, says, "A gentleman of his acquaintance had in 1816 a young Rook of a light ash-colour, most beautifully mottled all over with black, and the quill and tail-feathers elegantly barred. This curiosity he was naturally anxious to keep; when upon the bird moulting, all its mottled plumage vanished entirely,—it became a jet black Rook, and in this state was suffered to join its sable tribe, as a fit companion, in the fields." This agrees with my own observations. Accidental varieties will generally be found to be smaller and weaker birds than those which are truly characteristic of the species. As these young birds increase in age, and gain constitutional power, the secretions become perfect, and the plumage assumes its natural colours. The assumption of white feathers by old birds is probably the effect of the converse operation of this physiological law.

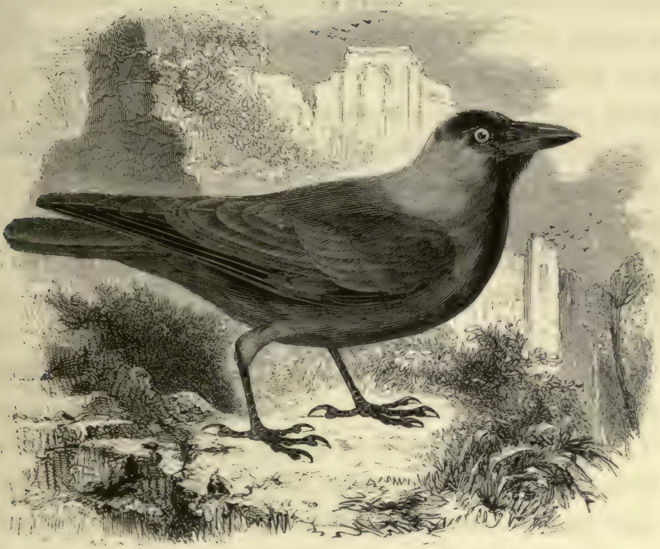
Malformations of the beak are by no means uncommon among the species of the genus *Corvus*, particularly in the Rook, and some remarks by John Blackwall, Esq., in his Researches in Zoology, refer to a question not yet entirely set at rest.

"A Rook preserved in the Manchester Museum, has its mandibles crossed near their extremities, but so slightly, as not to have interfered materially with the mode of procuring food usually employed by that species, as is clearly evinced by the denuded state of the nostrils and the anterior part of the head, both of which are entirely destitute of feathers. Another specimen, in the possession of Mr. R. Wood, a zealous collector of objects in natural history, residing in Manchester, has the mandibles greatly elongated, and much curved. Now it is evident that the bird, possessing a bill thus formed, could not thrust it into the ground in search of worms and the larvæ of insects, as the Rook is known to do habitually; and, accordingly, the plumage at the base of the bill of this individual, and the bristly feathers which cover its nostrils, are very conspicuous; not having sustained the slightest injury. The opinion, entertained by many persons, that the naked condition of the nostrils and anterior part of the head is an original peculiarity in the Rook, is thus satisfactorily proved to be incorrect: indeed the fact that young Rooks exhibit no deficiency in these particulars, is sufficiently conclusive on this point; but the possibility of an entire species being endowed with an instinct destructive of a usual portion of its organization, was probably never contemplated by these observers; it is not surprising, therefore, that the inference, deduced from a partial view of the subject, should be erroneous."

I have figured at page 90, a representation of an elongation of the under mandible in a Rook. I have now in my collection an example of a Rook in which the upper mandible is still more elongated and curved downwards, so as to render it most improbable that this bird could have obtained any part of its food by digging; yet in this specimen the skin around the base of the under mandible, is quite destitute of feathers. This would indicate that the want of feathers on the throat, which in this instance could not have been induced by abrasion when digging, was a specific peculiarity; but it is also possible that this nakedness might have been produced before the alteration in the form of the beak had taken place, and the bulbs from which the feathers arise, having been once injured might afterwards remain unproductive.

INSESSORES.
CONIROSTRES.

CORVIDÆ.



THE JACKDAW.

Corvus monedula.

Corvus monedula,	*The Jackdaw,*	Penn. Brit. Zool. vol. i. p. 296.
„ „	„ „	Montagu, Ornith. Dict.
„ „	„ „	Bewick, Brit. Birds, vol. i. p. 94.
„ „	„ „	Flem. Brit. An. p. 88.
„ „	„ „	Selby, Brit. Ornith. vol. i. p. 356.
„ „	„ „	Jenyns, Brit. Vert. p. 147.
„ „	„ „	Gould, Birds of Europe, pt. xiv.
„ „	*Le Choucas,*	Temm. Man. d'Ornith. vol. i. p. 111.

Jackdaws, in some of their habits, very much resemble Rooks, as last described, particularly in their sociability, living together in considerable numbers throughout the year, and whether seeking for food, or rearing their young, perfect harmony appears to prevail among them. They are even more bold and familiar than Rooks, approaching nearer the residence of man, and sometimes taking shelter under the roof of his dwelling. They have also an air of greater cheerfulness and activity in their movements. Jackdaws appear to prefer cultivated districts, frequenting and building in church towers, belfries, and steeples. I have observed that a great number constantly inhabit the higher parts of Windsor Castle. Sometimes these birds make their nests in hollow trees: from several good authorities we learn that Jackdaws breed frequently in rabbit-burrows, and on the sea coast they occupy cavities in high cliffs, or perpendicular rocks. It is mentioned by Pennant that these birds make their nests among the large masses of stone at Stone Henge, one nest was observed there recently, and Rusticus of Godalming says they build in great numbers in the chalk pit on Katherine Hill, near Godalming. The Rev. Leonard Jenyns, in a note to me, says, "In Cambridgeshire Jackdaws build very much in chimneys, which are sometimes quite stopped up from the quantity of sticks brought together. Neither do they appear to mind smoke, as I have known them attempt to build in the chimney of a room in which there was a fire kept pretty regularly from day to day. From the quantity of horse-dung which falls into the grates, it would seem that they use this material perhaps for lining the nest." Wool, and other soft substances, are the materials generally used for the lining, the outside is formed of sticks, and the mass collected together is sometimes very extraordinary both in quality as well as quantity. At Cambridge, says Mr. J. Denson,* there is good accommodation for Jackdaws in the abundant receptacles for their nests which the various churches and college buildings supply, and Jackdaws are numerous at Cambridge.

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* Magazine of Natural History, vol. vi. p. 397.

The botanic garden there has three of its four sides enclosed by thickly built parts of the town, and has five parish churches and five colleges within a short flight of it. The Jackdaws inhabiting these, and other churches and colleges, had discovered that the wooden labels placed near the plants, whose names they bore, in the botanic garden would serve well enough for their nests instead of twigs from trees, and that they possessed the greater convenience of being prepared ready for use, and placed very near home. A large proportion of the labels used in this garden were made out of deal laths, being about nine inches long and one inch broad. To these the Jackdaws would help themselves freely whenever they could do so without molestation, and the extent of the garden made this a matter of no great difficulty. Those who are aware how closely some species of the grasses, umbelliferous plants, &c. resemble each other, and who, consequently, know how necessary it is to prefix labels to them indicating their names, will readily perceive how much inconvenience arose from the Jackdaws' appropriation of the labels; and this especially when they removed them, as they sometimes did, from sown seeds, as the plants arising from these seeds must, in some species, grow for a year or more before their names could be ascertained. I cannot give a probable idea of the number of labels which the Jackdaws annually removed; but from the shaft of one chimney in Free School Lane, which was close beside the botanic garden, no less than eighteen dozen of these labels were taken out and brought to Mr. Arthur Biggs, the curator of the botanic garden, who received and counted them. Of the mass of materials sometimes collected for the nest by this species, I have evidence in a letter from Charles Anderson, Esq. of Lea, near Gainsborough, Lincolnshire, who says, that a

Jackdaw began its nest on a step of a stone staircase in Saunby Church, near Lea. The staircase is spiral, and the steps narrow and steep. Finding it could not get a firm base so that the nest should be flat and fit to sit on, the birds brought sticks till they piled it up five or six steps, after which came a landing, and then they finished their work securely. The clergyman of the place bore testimony to the quantity of sticks brought together, the labour of collecting which must have been quite extraordinary. Mr. Jesse has mentioned another instance; a representation of the structure being placed opposite the title-page of his 'Scenes and Tales of Country Life.'

The Jackdaw lays from four to six eggs; these are generally produced in May, and the young are hatched by the end of the month, or very early in June. The eggs are of a pale bluish white, spotted with ash colour and clove brown; the length one inch seven lines, by one inch and half a line in breadth. The young birds, which are usually fit to take from the nest by the end of the second week in June, are easily tamed, and much attached to those who feed them. They soon learn to imitate the sounds of the human voice, and exhibit other amusing qualities. Some remarkable instances are related in the Magazine of Natural History,* and in works upon Ornithology. The voice of the Jackdaw is more shrill than that of the larger Crows, and like them, it is by no means particular as to the quality of its food, eating indiscriminately insects, seeds, or grain, eggs, or carrion; on the sea shore, shell-fish, or the remains of other fish, and crustacea; it may be seen perched on the back of sheep to gather wool for its nest, or to pick out any parasitic insect it may find in such a situation: occasionally the Jackdaw visits gardens to feed on some of the softer vegetables and fruits; but in confinement appears to prefer meat. When once paired, Mr. Waterton considers that they remain partners for life.

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* Vol. vi. p. 516, and vol. vii. p. 151.

The Jackdaw is found in most parts of this country; but Mr. Macgillivray, who has paid great attention to the Ornithology of Scotland, says it is not found in the outer Hebrides. Mr. Low includes it as a bird of the Orkneys; but it is on the information of others: he does not appear to have seen the birds himself. It is not mentioned by Mr. Dunn as occurring in Shetland. It is found, however, still farther north in Denmark and in Scandinavia, in Russia, and in western Siberia, and Faber includes it as a bird of Iceland. The Jackdaw does not exist in America. Eastward from this country it is found very common in Holland and is a native of Germany, France, Italy, and the northern shores of Africa. It is found also at Corfu, Sicily, Malta, and Crete. Specimens have been forwarded to this country from Smyrna and Trebizond. It occurs in the countries between the Black and the Caspian seas, and from thence northward to Lake Baikal, but is not found in India.

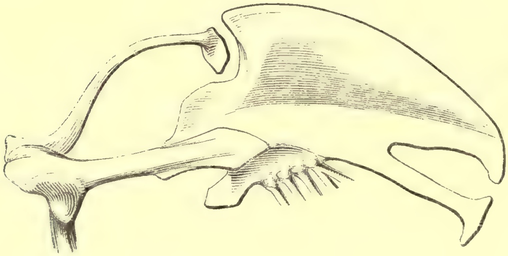
The beak is black and short, about the same length as the head of the bird; the basal half covered with feathers directed forwards; the irides greyish white; the crown of the head black; ear-coverts, nape, the whole of the neck behind and on the sides, smoke-grey; the whole of the back, wings, and tail, black; the wings exhibiting a portion of shining blue colour, but not so conspicuously as in the Crow or Rook; all the under surface of the body rusty black; legs, toes, and claws, shining black.

The whole length of a male bird about fourteen inches. The wing from the carpal joint to the end of the longest feather, nine inches and three-eighths ; the first wing-feather two inches and a half shorter than the second, which is three-quarters of an inch shorter than the third ; the third and fourth feathers nearly equal in length, and the longest in the wing. The wings when closed do not reach to the end of the tail by rather more than one inch.

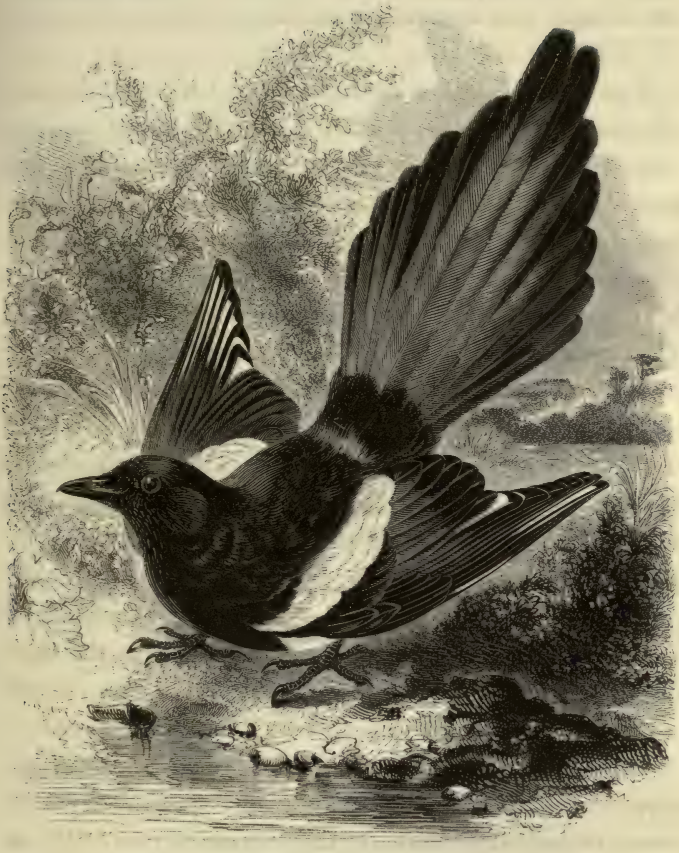
The female is smaller in size than the male ; the grey colour of the feathers under the hood is less conspicuous, being rather darker than that of the males, and is not spread over so large a surface.

Young birds of the year exhibit but little grey colour about the neck, and it is not much more obvious in the second year ; several years are probably required for the attainment of the bright silvery grey colour observable on some males.

The vignette below represents the breast-bone of the Jackdaw, as illustrative of the form of the sternum in the genus *Corvus*.



INSESSORES. *CORVIDÆ.*
CONIROSTRES.



THE MAGPIE.

Pica caudata.

Corvus pica,	*The*	*Magpie,*	Penn. Brit. Zool. vol. i. p. 289.
,, ,,	,,	,,	Montagu, Ornith. Dict.
,, ,,	,,	,,	Bewick, Brit. Birds, vol. i. p. 98.
Pica caudata,	*Common*	,,	Flem. Brit. An. p. 87.
,, *melanoleuca,*	*The*	,,	Selby, Brit. Ornith. vol. i. p. 358.
Corvus pica,	,,	,,	Jenyns, Brit. Vert. p. 147.
Pica caudata,	,,	,,	Gould, Birds of Europe, pt. i.
Corvus pica,	*La Pie,*	,,	Temm. Man. d'Ornith. vol. i. p. 113.

PICA. *Generic Characters.*—Beak strong, compressed laterally, slightly arched and hooked at the tip. Nostrils basal, covered by short stiff feathers, directed forwards. Wings short and rounded; first quill-feather very short, the fourth or fifth the longest in the wing. Tarsus longer than the middle toe. Tail long and graduated.

THE Long-tailed Pie kind among the Crows, or *Corvidæ*, admitted as a section by M. Temminck, have been advanced to generic distinction by Brisson, Dumeril, Cuvier, and Vieillot; and in this generic separation these systematic naturalists have been followed by most recent writers on the subject. The necessity for such subdivision has been long felt, and even anticipated: our Magpie is the *Pica caudata* of Gesner and Ray; fourteen or sixteen species of the genus are now known and admitted by Wagler and others, of which one only is British.

Although no bird in our catalogue is better known than the Magpie, yet accustomed only, as we are, to see it at a distance in the fields, or penned up in a cage where its plumage is soiled and disfigured by confinement, its singular beauty is almost unsuspected; yet with an agreeable variety and arrangement in the principal colours, the black and the white are as pure, as the green, the blue, and the purple, with their ever-varying reflections, are brilliant.

With a handsome exterior, the Magpie is, however, a suspicious character; and though cautious to a degree, it rarely removes far from the habitations of man. Its attachment, as observed by Montagu, "is governed by self-interest; it is a great enemy to the husbandman and the preserver of game; but has cunning enough to evade their wrath. No animal food comes amiss to its carnivorous appetite; young poultry, eggs, young lambs, and even weakly sheep it will attempt to destroy by first plucking out their eyes; the young of hares, rabbits, and feathered game, share the same fate; fish, carrion, insects, and fruit, and, lastly, grain, when nothing else can be got. It is an artful noisy bird, proclaiming aloud any apparent danger, and thereby gives notice to its associates. Neither the fox, or other wild animal, can appear without being observed and haunted; even the fowler is frequently spoiled of his sport, for all other birds seem to know the alarming chatter of the Magpie."

Of Magpie-hawking, Sir John Sebright says, "Nothing can be more animating than this sport: it is, in my opinion, far superior to every other kind of hawking. The object of the chase is fully a match for its pursuers,—a requisite absolutely necessary to give an interest to any sport of this kind; and it has the advantage of giving full employment to the company, which is not the case in Partridge-hawking. A down or common, where low trees or thorn bushes are dispersed at the distance of from thirty to fifty yards apart, is the place best calculated for this diversion. When a Magpie is seen at a distance, a Hawk is immediately to be cast off. The Magpie will take refuge in a bush the moment he sees the Falcon, and will remain there until the falconer arrives, with the Hawk waiting on in the air. The Magpie is to be driven from his retreat; and the Hawk, if at a good pitch, will stoop at him as he passes to another bush, from whence he is to be driven in the same way, another Hawk having been previously cast off, so that one or the other may always be so situated as to attack him to advantage. The second Hawk is necessary, for the Magpie shifts with great cunning and dexterity to avoid the stoop; and when hard pressed, owing to the bushes being rather far apart, will pass under the bellies of the horses, flutter along a cart-rut, and avail himself of every little inequality of the ground in order to escape. Four or five assistants, besides the falconer, who should attend solely to his Hawks, are required for this sport. They should be well mounted, and provided with whips; for the Magpie cannot be driven from a bush by a stick; but the crack of a whip will force him to leave it, even when he is so tired as hardly to be able to fly. The Magpie will always endeavour to make his way to some strong cover; care, therefore, must be taken to counteract him, and to drive him to that part of the ground where the bushes are farthest from each other. It is not easy to take a Magpie in a hedge. Some of the horsemen must be on each side of it; some must ride behind, and some before him; for, unless compelled to rise, by being surrounded on all sides, he will flutter along the hedge, so as to shelter himself from the stoop of the Falcon. Many requisites are necessary to afford this sport in perfection; —a favourable country, good Hawks, and able assistants."

Magpies generally continue in pairs all the year round. They build in high trees, sometimes in a lofty hedge, and occasionally in a low but thick bush, returning to the same nest for several years in succession. The nest is well constructed for security against enemies; it is of an oval shape, and large, framed on the outside with sharp thorny sticks, strongly interwoven, and forming a dome over the top. The framework of sticks is plastered with earth on the inside, and afterwards covered with a lining of fibrous roots and dry grass. One small aperture is left on the side just large enough to admit the parent bird, who generally sits with her head to the hole, ready to quit the nest on the slightest alarm.

The Magpie breeds early in spring, producing six or seven eggs of a pale bluish white colour, spotted all over with ash-colour and two shades of greenish brown; the length one inch four lines and a half; the breadth one inch.

When taken young the Magpie is easily tamed, chatters to those who feed or notice him, imitates the sound of the human voice, and learns many amusing tricks: the desire to pilfer and hide any small shining article, observable in all the birds of this family, is particularly conspicuous in the Magpie, and has been made the subject of a dramatic performance of an interest so intense, that few who have witnessed the exhibition are likely to forget.

The young birds of the year associate with the parents for a considerable time; and in winter these birds, in small flocks, roost together in thick woods, but separate again in the day.

The Magpie, in this country, has a bad name, and is accordingly doomed to destruction by every one who carries a gun. But for its sagacity, eminently evinced in its self-preservation, it would be a rare bird; it is, however, very common in many parts of England, particularly in the wooded districts, and not much less so in other quiet park-like localities, where it can have the shelter, the means of observation, and the security afforded by high trees. In my note-book I have a memorandum that I once counted twenty-three Magpies together in Kensington Gardens.

It is now also common throughout Ireland; but that this was not the case in that country formerly, the following account, supplied me by my friend Mr. Ogilby, will show:—

"The earliest notice I have met with on the subject of the introduction of Magpies into Ireland is contained in the following verses of old Derrick, who, in his 'Image of Ireland,' says,—

'No Pies to plucke the thatch from house
Are bred in Irish grounde,
But worse than Pies the same to burne
A thousand maie be founde.'"

It would appear, therefore, that, in the time of Queen Elizabeth, the Magpie did not exist in Ireland: and even so late as the year 1711, it seems to have been confined to the neighbourhood of Wexford, where, however, it must have been introduced long prior to that period, since Swift, in the following extract, speaks of it as indigenous to that part of the country. The passage occurs in the twenty-sixth letter of the Journal to Stella, under the date of June 30, 1711, and is as follows:—"Pray observe the inhabitants about Wexford; they are old English; see what they have particular in their manners, names, and language. Magpies have been always there, and no where else in Ireland, till of late years." It must be confessed that the testimony afforded by this passage is not so explicit as could be wished. That the Magpie existed always, or, in other words, was indigenous to the vicinity of Wexford, and to no other part of the country, is scarcely credible, even if it were not directly contradicted by the preceding quotation from Derrick. That it might have continued to be a local denizen for a considerable time after its introduction, is more probable, and more in accordance with the habits of the bird: and this circumstance of its locality probably gave origin to the popular idea expressed by Swift, of its being indigenous to the county of Wexford. We may, however, conclude with greater certainty,—for upon this point our authority is express,—that it was only in the reign of Queen Anne that the bird began to spread generally over the kingdom;—that is, at the same period as the introduction of Frogs; and indeed I have sometimes heard these two events spoken of traditionally as having been simultaneous. The town of Wexford is remarkable as having been the first place of strength in the island which was reduced and colonized by the English. Even to the present day the great majority of the inhabitants of that part of the country are of English extraction; and it is not improbable that their forefathers brought the Magpie with them from England, perhaps as a pet, to put them in mind of their native land; for it is scarcely possible that any one would voluntarily introduce so mischievous an animal. At all events, St. Patrick's curse, which is said to rest so heavily on the whole tribe of serpents, does not appear to have extended to Frogs and Magpies, for I know no part of the world where both breeds thrive better or faster than in Ireland.

Smith, in his "History of Cork," says, the Magpie was not known in Ireland seventy years before the time at which he wrote, about 1746. Tradition says, also, that they were driven over to Ireland from England during a storm.

From Pembrokeshire to Wexford would not be a difficult flight.

The Magpie is common in Scotland; but according to Mr. Macgillivray it is not found in the outer Hebrides, in Orkney, or in Shetland.

In France the Magpie is one of the few birds, if not the only one, which no one seems to destroy, and it is accordingly very common; while all other birds,—at least, as it appeared to me when in that country,—are remarkably scarce. In Sweden, neither the Magpie, its nest, nor its eggs, are ever touched; while in the adjoining country, Mr. Hewitson, of Newcastle, says,* "The Magpie is one of the most abundant, as well as the most interesting of the Norwegian birds; noted for its sly cunning habits here, its altered demeanour there is the more remarkable. It is upon the most familiar terms with the inhabitants, picking close about their doors, and sometimes walking inside their houses. It abounds in the town of Drontheim, making its nest upon the churches and warehouses. We saw as many as a dozen of them at one time seated upon the gravestones in the churchyard. Few farmhouses are without several of them breeding under the eaves, their nest supported by the spout. In some trees close to houses their nests were several feet in depth, the accumulation of years of undisturbed and quiet possession."

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* Magazine of Zoology and Botany, vol. ii. p. 311.

"The inhabitants of Norway pleased us very much by the kind feeling which they seemed to entertain towards them, as well as to most species of birds, often expressing a hope that we would not shoot many. Holes are cut in many of their buildings for the admission of some, and pieces of wood are nailed up against them to support the nests of others. At Christmas, that the birds may share their festivities and enjoyments, they place a sheaf of corn at the end of their houses."

Fynes Moryson, who wrote a short account of Iceland about 1602, states, "We have here no chattering Pie;" but Sir William Hooker, in his tour in 1809, remarks that a tradition in Iceland says, the Magpie was imported into that country by the English out of spite.

Our Magpie is a native of the United States and North America from Louisiana* to the Fur-countries,† it exists in the Rocky Mountains‡ also, and has been found in that direction as far as Kamtschatka.

To return to the central portions of Europe: the Magpie is there common. Southward, it is found in Portugal, Spain, Provence, Italy, Sicily; Malta, the Morea, Smyrna, Aleppo, in the country between the Black and the Caspian seas, and in the southern part of Russia and Siberia. East-

* Audubon. † Richardson. ‡ Nuttall.

ward from thence it has been found by Mr. Blyth in India, it exists in China and in Japan. In the northern hemisphere of the globe, therefore, the longitudinal range of the Magpie is very extensive.

The beak is black; the irides hazel; the head, neck, back, and upper tail-coverts, jet black; rump greyish white; the scapulars pure white; wing-coverts and tertials of a fine shining blue; the primaries black, with an elongated patch of pure white on the inner web of each of the first ten feathers; the tail graduated, the outside feather on each side not exceeding five inches in length, the middle ones nearly eleven inches long, in colour beautifully iridescent, with blue and purple near the end, and green from thence to the base. Chin and throat black, the shafts of some of the feathers shining greyish white; upper part of the breast black; the lower part of the breast, the belly, sides, and flanks, pure white; under tail-coverts black; under surface of tail-feathers uniform dull black: thighs, legs, toes, and claws, black.

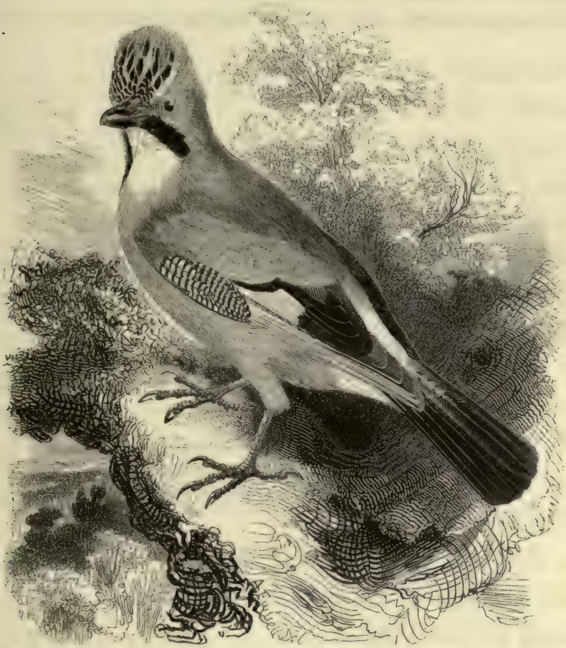
The whole length of an adult male is full eighteen inches, of which the longest tail-feathers measure nearly eleven inches. The wing from the carpal joint to the end of the longest primary, seven inches and one quarter: the first feather only two inches and a half long; the second about one inch shorter than the third; the fourth, fifth, and sixth feathers nearly equal in length, but the fifth is rather the longest. The wing, it will be observed, is shorter and less pointed than that of the true Crows, and the flight of the bird is different; the vibrations are quick, are given in rapid succession, and apparently with more effort. On the ground this bird progresses either by walking or hopping.

The female is smaller in size, the tail is shorter, and the plumage less brilliant.

Specimens varying in the colour of their plumage occur occasionally.

Malformations of the beak, similar to that represented in the vignette at page 90, and still further approaching the form of the mandibles in the true Crossbills, have occurred in the Magpie; and Mr. John Blackwall, in his published Researches in Zoology, page 173, notices a similar instance in the Jackdaw. This specimen, now deposited in the Museum of the Society established in Manchester for the promotion of Natural History, was observed to be in excellent condition, though killed in the month of January; a convincing proof, as Mr. Blackwall observes, that the bird had acquired great expertness in the management of its singularly-formed bill.

To THE
SUSPENSION. BR



THE JAY.

Garrulus glandarius.

Corvus	*glandarius,*	*The Jay,*	Penn. Brit. Zool. vol. i. p. 291.
"	"	"	Montagu, Ornith. Dict.
"	"	"	Bewick, Brit. Birds, vol. i. p. 100.
Garrulus	"	"	Flem. Brit. An. p. 86.
"	"	"	Selby, Brit. Ornith. vol. i. p. 362.
"	"	"	Jenyns, Brit. Vert. p. 148.
"	"	"	Gould, Birds of Europe, pt. ix.
Corvus	"	*Le Geai,*	Temm. Man. d'Ornith. vol. i. p. 114.
Garrulus	"	"	" Supplt. 1st Part, p. 65.

Garrulus. *Generic Characters.*—Beak shorter than the head, conical, slightly compressed, straight at the base, commissure straight, tip of the upper mandible distinctly notched, and rather suddenly bent over the lower. Nostrils basal, lateral, hidden from view by incumbent bristles. Wings moderate, rounded; the first three quill-feathers graduated, the fourth, fifth, and sixth of nearly equal length, and the longest in the wing. Legs moderate, tarsus longer than the middle toe, the outer toe joined at its base to the middle toe, and longer than the inner; claws stout, curved, and sharp. Tail slightly rounded.

In the family of the Crows generic distinction has been successfully claimed for the Jays by Brisson and others. M. Temminck formerly included our Jay in his third section of the genus *Corvus*, but in the Supplement to the first volume of his Manual, published in 1835, this distinguished Ornithologist has admitted the genus *Garrulus* by name, as quoted in the list of authors at the head of this article, and it should not be forgotten that our Jay was called *Garrulus* by Willughby * as long ago as 1678. Many species of this genus are now known, some of which inhabit North America, and Mr. Gould has lately figured several beautiful examples in his Century of Birds from the Himalaya Mountains.

The Jay is a handsome bird well known in most of the wooded districts of England, more arboreal in its habits, appearing to prefer the shelter and security of thick covers, not frequenting open grounds so commonly as the other birds of this family, and has been called *glandarius*, because considered more partial to feed on vegetable productions, such as acorns and beech-mast, than the true Crows are observed to be.

Besides feeding on insects and worms, the Jay, in summer, frequents gardens, unable to resist the temptation of peas and cherries; and as he is believed also to be partial to eggs and young birds, the Jay meets with no favour from gardeners or gamekeepers, and is accordingly shot or trapped and hung up as an example upon all occasions.

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* Ornithology of Francis Willughby, Esq , F.R.S. London, 1678, p. 131.

The Jay seldom builds its nest higher than twenty feet from the ground, preferring the upper part of a thick bush in high wood, or in a tall hedge-row, and occasionally one of the lower branches of a large tree, if sufficiently thick with leaves to afford the required concealment. The nest is cup-shaped, open at the top, formed on the outside with short sticks, and thickly lined with fine roots and grasses. The female lays five or six eggs of a yellowish white ground colour, minutely and thickly speckled all over with light brown, presenting the appearance of a uniform yellow-grey brown; the length one inch four lines, and one inch in breadth.

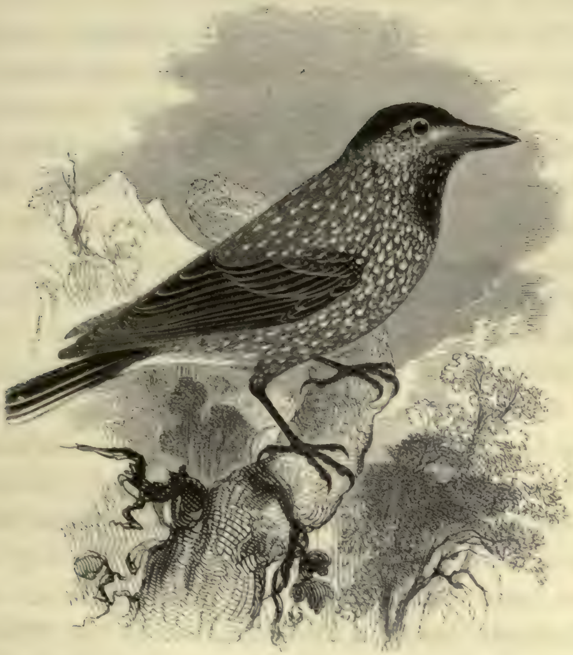
The young birds follow their parents for several months after they leave the nest, some observers say even to the pairing-time of the following spring. Montagu says they are never gregarious; but they are stated by Vieillot, and others, to perform certain migrations in small flocks in the southern parts of the European continent, and they have been seen, by those who pay constant attention to the habits of birds, to come in the winter, in small parties of from twenty to forty at a time, to take up their temporary residence in thick woods on the Hampshire coast, in the vicinity of Christchurch.

Young birds are easily brought up from the nest, soon become very tame, and in confinement appear to prefer meat to any other description of food. Although the most common notes of the Jay are harsh and grating, the bird in captivity soon becomes an amusing pet, from the facility with which it imitates the sound of the human voice, and indeed almost any other sound that is to be heard sufficiently often to afford the opportunity of acquiring it. Montagu says that it will sometimes in the spring utter a sort of song in a soft and pleasing manner, but so low as velvet black, indistinctly barred transversely with blue and black at the base of the outer web; the last tertials of a rich chestnut colour, particularly on the inner web; rump and upper tail-coverts pure white; tail-feathers dull black, indistinctly barred at the base; the outer tail-feather on each side the lightest in colour, approaching to brown; chin greyish white; breast and belly reddish buff colour; vent and under tail-coverts dull white; the under surface of wings and tail-feathers smoke grey; legs, toes, and claws, pale brown.

The whole length of the specimen described thirteen inches and three-quarters. From the carpal joint to the end of the wing seven inches and one-eighth; the first feather about two inches and a half long; the second feather about four inches and a half, and one inch shorter than the third; the fourth, fifth, and sixth feathers nearly equal, and the longest in the wing.

There is scarcely any describable difference in the plumage of the two sexes.

INSESSORES. *CORVIDÆ*



THE NUTCRACKER.

Nucifraga caryocatactes.

Corvus caryocatactes,	*The Nutcracker,*	Penn. Brit. Zool. vol. i. p. 298.
,, ,,	,, ,,	Montagu, Ornith. Dict.
,, ,,	,, ,,	Bewick, Brit. Birds, vol. i. p. 103.
Caryocatactes nucifraga,	,, ,,	Flem. Brit. An. p. 88.
Nucifraga caryocatactes,	,, ,,	Selby, Brit. Ornith. vol. i. p. 368.
,, ,,	,, ,,	Jenyns, Brit. Vert. p. 149.
,, ,,	,, ,,	Gould, Birds of Europe, pt. ix.
,, ,,	*Le Casse Noix,*	Temm. Man. d'Ornith. vol. i p. 117.

Nucifraga. *Generic Characters.*—Beak about as long as the head, straight, conical; the base dilated and dividing the frontal feathers; both mandibles terminating in an obtuse point. Nostrils basal, round, open, concealed by hairs directed forwards. Wings rather long; the first quill-feather the shortest, the fourth, fifth, and sixth, nearly equal, and the longest in the wing. Tail nearly velvet black, indistinctly barred transversely with blue and black at the base of the outer web; the last tertials of a rich chestnut colour, particularly on the inner web; rump and upper tail-coverts pure white; tail-feathers dull black, indistinctly barred at the base; the outer tail-feather on each side the lightest in colour, approaching to brown; chin greyish white; breast and belly reddish buff colour; vent and under tail-coverts dull white; the under surface of wings and tail-feathers smoke grey; legs, toes, and claws, pale brown.

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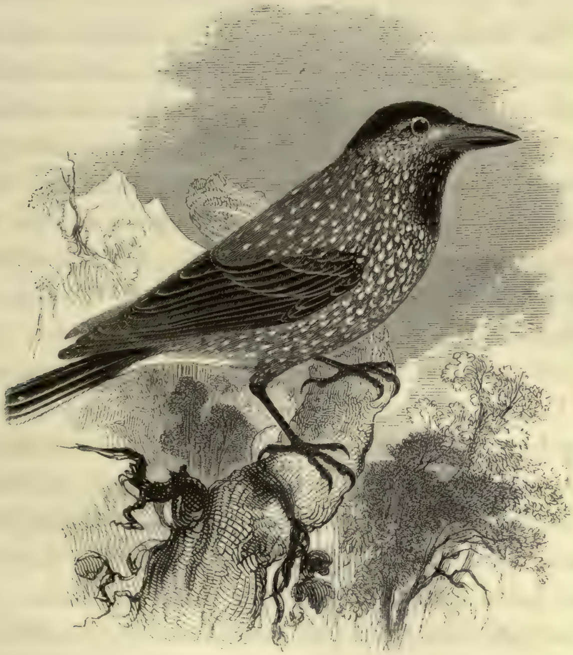
There is scarcely any describable difference in the plumage of the two sexes.



THE NUTCRACKER.

Nucifraga caryocatactes.

Corvus caryocatactes,	*The Nutcracker,*	Penn. Brit. Zool. vol. i. p. 298.
,, ,,	,, ,,	Montagu, Ornith. Dict.
,, ,,	,, ,,	Bewick, Brit. Birds, vol. i. p. 103.
Caryocatactes nucifraga,	,, ,,	Flem. Brit. An. p. 88.
Nucifraga caryocatactes,	,, ,,	Selby, Brit. Ornith. vol. i. p. 368.
,, ,,	,, ,,	Jenyns, Brit. Vert. p. 149.
,, ,,	,, ,,	Gould, Birds of Europe, pt. ix.
,, ,,	*Le Casse Noix,*	Temm. Man. d'Ornith. vol. i p. 117.

Nucifraga. *Generic Characters.*—Beak about as long as the head, straight, conical; the base dilated and dividing the frontal feathers; both mandibles terminating in an obtuse point. Nostrils basal, round, open, concealed by hairs directed forwards. Wings rather long; the first quill-feather the shortest, the fourth, fifth, and sixth, nearly equal, and the longest in the wing. Tail nearly square at the end. Tarsus longer than the middle toe; toes three before, one behind, the two outer toes on each side united at the base.

THE NUTCRACKER CROW, as it is sometimes called, has been separated from the true Crows by most modern systematic authors. Though allied to the Crows in several particulars, this bird exhibits also some of the habits of the Woodpeckers, and in systematic arrangement has therefore been judiciously placed between the Crows and the Woodpeckers, as a connecting link indicating by its modifications the transition from the one to the other. Two species of the genus *Nucifraga* of Brisson are now known.

Although the Nutcracker is not uncommon in some parts of Europe, its occurrence in this country is so rare that it may be useful to enumerate such as have been recorded. Pennant, in the edition of his British Zoology, published in 1766, says of the Nutcracker, vol. ii. p. 265, that the specimen he took his description from was the only one he ever heard of that was shot in these kingdoms. It was killed near Mostyn in Flintshire, October 5th, 1753.

Montagu, in his Ornithological Dictionary, besides referring to the specimen killed in Flintshire, mentions another that was killed in Kent. In the Supplement to his Dictionary, under the article Nutcracker, he says, "Mr. Anstice assures us he saw one of this rare species near Bridgewater, upon a Scotch fir, in the autumn of 1805. This accurate observer of nature could not be deceived, as he examined the bird, and attended to its actions for some time with the aid of a pocket telescope, which he usually carried with him for similar purposes. In August 1808, one of these birds was shot in the north of Devon, now in the collection of Mr. Comyns. Another is stated in the Monthly Magazine for December 1808, to have been shot in Cornwall."

Mr. Selby refers to one seen in Netherwitton Wood in the county of Northumberland, in the autumn of 1819, by his brother Captain Robert Mitford, of the Royal Navy, who also during an excursion in Switzerland, September 1825, met with a large flock of Nutcrackers in a forest mostly composed of pinasters and stone pines. These birds were all busily engaged, feeding upon the seeds contained in the cones. They were not wild, but allowed of a near approach.

Mr. E. H. Rodd, of Penzance, in an extended communication to myself on the birds of Cornwall, mentions that one was seen on a tree on the banks of Hooe Lake by Thomas Bulted, Esq., of Belle Vue, near Plymouth.

Dr. Edward Moore of Plymouth, in his published catalogue of the Birds of Devonshire, besides referring to the example mentioned by Montagu, has recorded one other that was shot in Devonshire in 1829, near Washford Pyne Moor, by Mr. W. Tucker, of Dawlish.

Rusticus, of Godalming, has lately noticed that one was closely watched by a gentleman in Pepper Harrow Park, the seat of Lord Middleton.

Mr. Macgillivray, in his History of British Birds, says, "There is a specimen in the Museum of the University of Edinburgh, said to have been shot in Scotland; another in that of Mr. Arbuthnot, at Peterhead; while the individual, also killed in Scotland, from which this description was taken, belongs to Mr. Thomas Henderson, Coate's Crescent, Edinburgh."

I do not find any notice of the occurrence of this bird in Ireland.

M. Vieillot says this bird appears to prefer mountainous countries that are covered with firs. They are found in Auvergne, Savoy, on the Alps in Switzerland, and in Austria, where our countryman and naturalist Willughby mentions having seen them. P. Roux includes the Nutcracker among his Birds of Provence, and M. Savi also in his Birds of Italy. Although properly speaking the Nutcracker is not a migratory bird, yet M. Vieillot observes that they frequently wander from one part of the country to another, probably because some article of food fails them. They unite occasionally, forming numerous flocks, quit the mountains, and descend to spread their numbers over the plains, always selecting those in which they find abundance of firs. Their food consists of insects, seeds of pines, beechmast, and nuts: these last they are said to crack like the Nuthatch, by fixing them in a crevice of the bark of a tree, and then pecking at them with great force with the beak. Messrs. Wolf and Meyer, in their History of the Birds of Germany, and M. Nilsson, in his Ornithology of Sweden, and M. Temminck, in his Manual of the Birds of Europe, each state that the Nutcracker does occasionally feed on eggs or young birds, thus resembling the Crows; and it is also said that it can climb the bark of a tree like the Woodpecker. A gentleman who had travelled in Norway, where he had seen the Nutcracker, says, "That they frequent the extreme tops of the Pines, keeping a sharp look out, and very shy. When on the wing, the flight is like that of the Jackdaw. They nest in holes of trees, which they excavate or enlarge sufficiently for their purpose, like the Woodpeckers;" and this is not the only point of resemblance to that tribe of birds, for he found that the middle feathers of the tail were worn by climbing among the trunks and branches of trees.

During the autumn of 1844 an unusual number of Nutcrackers were observed to visit different parts of Europe. They were particularly noticed in Germany and Belgium;

many appeared in the southern part of Sweden, and my friend Mr. Dann, now residing in that country, whose communications in ornithology I have so frequently had the advantage of acknowledging, told me when he was in London last winter that these birds appeared on his grounds in small parties of six or seven together, like families, and as he watched them, he observed that they were very busy turning over and picking off the moss and lichens attached to the rocks for the sake of the insects they found underneath. A few specimens of the Nutcracker visited this country. One was killed at Rollesby near Yarmouth, on the 30th of October, and is now in the possession of J. H. Gurney, Esq., of Norwich, as recorded in the Zoologist by W. R. Fisher, Esq. The stomach contained nothing but coleopterous insects. Another was killed in September last, while flying over a field of turnips, at Littlington near Alfristone, in Sussex, and is now in the collection of Mr. Wm. Borrer, jun. The Zoological Society have, for some months past, had a Nutcracker alive in the aviary. Contrary to the power proclaimed by the name, this bird cannot crack nuts; when cracked for him he eats the kernels greedily, but is fed principally with hemp seed. Some of the actions of this bird resemble those of the Nuthatch, and he demolishes the woodwork of his cage like a Woodpecker. So far back as 1831, M. Brehm had included in his Manual of the Birds of Germany, two species of Nutcracker, characterised principally by the difference observed in the length and strength of the beak, and named in reference to these peculiarities. The examination of several examples in the autumn of 1844, has induced M. Edm. de Selys-Lonchamps of Belgium to adopt the opinion of M. Brehm. Among our British examples both these modifications of the beak occur, but some specimens also exhibit intermediate lengths and characters. The figure in Bewick's British Birds appears to me to have been taken from a long and slender billed bird; that here given is taken from a bird with a shorter and stout bill. The living bird at the Zoological Garden has a slender bill. Mr. Fisher, at page 824 of the 25th number of the Zoologist, has given a faithful outline of the form of the beak in Mr. Gurney's Yarmouth bird, which is also slender, and measures one inch and seven-eighths in length, from the commencement of the feathers on the forehead to the point; the bill in the bird figured in this work measures full one quarter of an inch shorter, and there are differences also in the plumage. The opportunity of examining a considerable number of specimens, of which the age and sex are known, is necessary to assist in arriving at a good opinion on the question; in the absence of such opportunity I am induced to consider the differences of the lengthened bill and brighter plumage as marks of greater age.

The eggs are said to be five or six in number, of a yellowish grey colour, with a few spots of yellowish or wood-brown. An egg in the collection of Mr. Willmot, of the Temple, which is believed to be that of a Nutcracker, and which that gentleman very kindly lent me to have a drawing made from it for my use in this work, measures one inch one line in length, by ten lines in breadth, is also of a greyish white colour, spotted over the larger end with bluish grey and light ash brown.

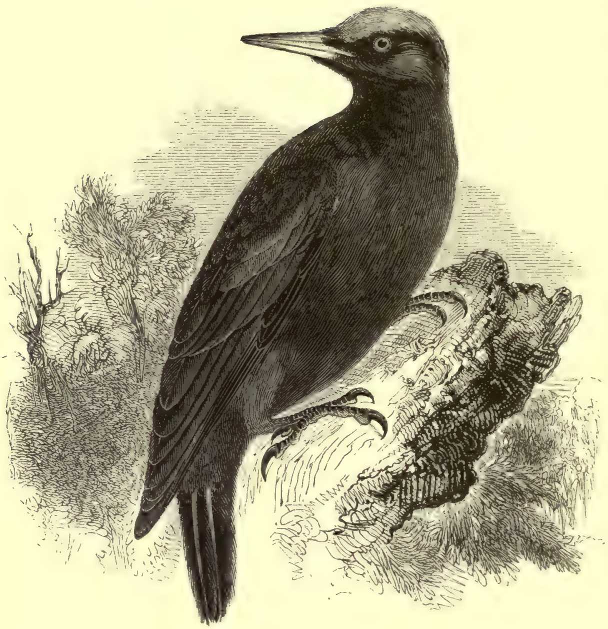
Besides the countries already named as inhabited by the Nutcracker, Pennant says he received a specimen from Denmark by means of M. Brunnich, author of the *Ornithologia Borealis*, and the bird is also included in the *Zoologia Danica* of Müller. It is said to be common in the pine forests of Russia, Siberia, and Kamtschatka.

The beak is black; the lore, or space between the beak and the eye, dull white; irides brown; top of the head umber brown without spots; the sides of the head, the scapulars, the whole of the back, the lesser wing-coverts, and all the under surface of the body clove brown, each feather terminating with an elongated triangular spot of dull white; the greater wing-coverts and the wings blackish brown, the ends of the feathers rather lighter in colour than the other parts; the rump uniform clove brown, without spots; upper tail-coverts blackish brown; the two middle of the twelve tail-feathers also blackish brown, without any white; the next tail-feather on each side has a narrow white tip; the white colour occupies more space in each next feather towards the outside, increasing to a space of three-quarters of an inch at the ends of those on the outside; the under tail-coverts and the under surface of the tail-feathers greyish brown, the latter ending in dull white; tail in form nearly square at the end; legs, toes, and claws, black.

The whole length of the specimen described thirteen inches and three-quarters. The length of the wing from the carpal joint to the end of the longest quill-feather seven inches: the first quill-feather one inch and a half shorter than the second, which second quill-feather is three-quarters of an inch shorter than the third, the third equal in length to the eighth; the fourth, fifth, and six feathers one quarter of an inch longer than the third, all three nearly equal in length, and the longest in the wing. M. Temminck says the brown plumage of the female is tinged with red.

INSESSORES.
SCANSORES.

PICIDÆ.



THE GREAT BLACK WOODPECKER.

Picus martius.

Picus martius, Great Black Woodpecker,	PENN. Brit. Zool. vol. i. p. 325.
,, ,, ,, ,, ,,	MONTAGU, Ornith. Dict.
,, ,, ,, ,, ,,	BEWICK, Brit. Birds, vol. i. p. 138.
,, ,, ,, ,, ,,	FLEM. Brit. An. p. 92.
,, ,, ,, ,, ,,	SELBY, Brit. Ornith. vol. i. p. 375.
,, ,, ,, ,, ,,	JENYNS, Brit. Vert. p. 151.
,, ,, ,, ,, ,,	GOULD, Birds of Europe, pt. i.
,, ,, *Le Pic noir,* ,,	TEMM. Man. d'Ornith. vol. i. p. 390.

PICUS. *Generic Characters.*—Beak about as long as the head, straight, pyramidal, compressed, pointed. Nostrils basal, oval, open, hid by hair-like feathers directed forwards. Wings moderate; the first quill-feather short, the third or fourth the longest in the wing. Feet strong, formed for climbing, with two toes before and two behind, rarely with only a single toe behind; the two anterior toes connected together at the base, the two posterior toes entirely free. Tail of ten or twelve feathers, the outside one the shortest, the others more or less graduated, the shafts strong, elastic, and pointed.

The subjects of the third division of the *Insessores*, or Perching Birds, are the *Scansores*, or Climbers; a division, which, as its name implies, includes all those birds remarkable for their power of climbing, to accomplish which most of them have their toes arranged in pairs, or two opposed to two, but with some modifications, to be hereafter described. In our British Birds eight genera, forming three families, belong to the *Scansores*, commencing with the *Picidæ*, or family of the Woodpeckers.

The Great Black Woodpecker was added to the catalogue of British Birds on the authority of Dr. Latham, who said he had been informed that it had occasionally been seen in Devonshire and the southern parts of the kingdom. Dr. Pulteney, in his Catalogue of the Birds of Dorsetshire, notices the Great Black Woodpecker as having been more than once killed in that county: one in particular is said to have been shot in the nursery at Blandford, and another at Whitchurch. Montagu, in his Supplement, says, "Lord Stanley assures us that he shot a *Picus martius* in Lancashire; and we have heard that another was shot in the winter of 1805 on the trunk of a tree in Battersea Fields." The specimen of the Black Woodpecker, formerly in the collection of Mr. Donovan, who was well known to give very high prices for rare British-killed birds, for his own use in his History of British Ornithology, this example, was affirmed to have been shot in this country. At the sale of Mr. Donovan's collection, this specimen was purchased by Earl Derby, and is now at Knowsley. I have been told of two instances of the Black Woodpecker having been killed in

Yorkshire, but the birds falling into the hands of those who were not aware of the Ornithological interest attached to them, the specimens were not preserved. This species is also recorded to have been killed in Lincolnshire. A few years since a communication was made to the Zoological Society of London, that two examples of the Great Black Woodpecker had been at that time killed in a small wood near Scole Inn, in Norfolk; and still more recently, a pair were frequently seen in a small preserved wood, near Christchurch in Hampshire. It was hoped that they would have remained to go to nest; but the birds disturbed by being too frequently watched, left the wood. Lastly, I may add, that Sir Robert Sibbald, in his *Scotia Illustrata*, claims *Picus martius* as a bird of Scotland, including it in his *Historia Animalium in Scotia*, p. 15.

The general habits of the Woodpeckers are well known. These birds are rather limited in their powers of flight; they live in, or near woods, are retiring and shy, hiding themselves from view when approached by passing to that side of the tree or branch which is farthest from the intruder. They search the bark of trees, or decaying parts, for any insects that may be concealed in the fissures, ascending the body of the tree or its branches, with facility by climbing, occasionally supporting themselves by their tail-feathers, the shafts of which are strong, elastic, and pointed. The tongue of these birds, by a particular anatomical construction, is capable of great elongation and extension, and being copiously supplied with a tenacious mucus, secreted by large glands on the sides of the throat, small or light insects are rapidly taken up by adhesion. During the night these birds occupy the holes so frequently to be observed in trees, some of which they excavate, or partially enlarge for themselves by working with the point of their sharp and strong bill. In these holes, at the usual season, the eggs are deposited, which in all the species, as far as they have been ascertained, are invariably white, smooth, and shining. The males are said to take a share in the task of incubation. In these particulars the Black Woodpecker agrees, as far as its history can be gathered from the works of European Ornithologists. The egg of this bird is exactly like that of our well-known Green Woodpecker in shape and colour, but is considerably larger. One specimen, in the possession of Mr. Wilmot, whose rich collection was referred to in the account of the Nutcracker, last described, is one inch four lines long, and one inch one line in breadth. According to M. Temminck, the Black Woodpecker lays three eggs, and in default of finding insect food, will feed on nuts, seeds, or berries.

The Black Woodpecker is not found in Holland, but M. Vieillot and Polydore Roux include it among the birds of France and Provence. M. Necker says it is not uncommon in the pine forests of the mountains of Switzerland, and M. Savi also says that it is not uncommon on the mountains of Savoy and in the Tyrol, occasionally in winter appearing in the vicinity of Rome. A small number inhabit Sicily, where they remain all the year. Mr. H. E. Strickland, in his Catalogue of birds obtained or seen in Asia Minor, mentions that he saw a specimen of this Woodpecker in the possession of Mr. Zohrab, at Broussa, which was shot in the pine forests of Mount Parnassus. Northward, it is a native of Denmark, Sweden, and Norway. Mr. Hewitson, in reference to the Birds of Norway, says, " In two instances only the Great Black Woodpecker was seen at a distance, but so wild, that it was impossible to approach it; on the wing it looks like a

Crow, and its notes resemble a loud hoarse laugh." It is found in Germany, and from thence to the most northern parts of Russia and Siberia; this bird, therefore, has an extended latitudinal range.

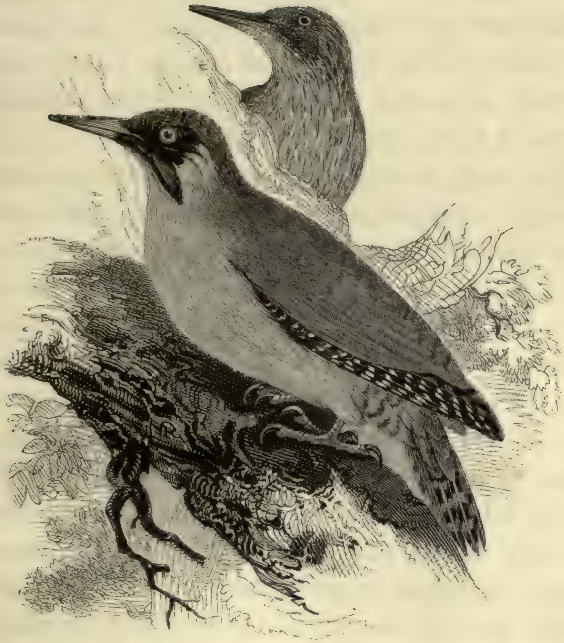
The male:—Beak as long as the head, rather conical in shape, with a well-defined, elevated, central ridge, extending the whole length of the upper mandible from the base to the point; in colour it is black at the end, passing by a bluish horn colour to almost white at the base; a small tuft of black hair-like feathers extending forwards above each nostril; the irides straw colour; the upper surface of the head is covered with feathers that are black at the base, but tipped with rich arterial blood red, forming a cap which reaches to the occiput; the whole of the body of the bird, both above and below, the wings and the tail, are of uniform black, of which the under surface of the body is rather more dull in colour than the upper; the tarsi partly covered with black feathers; the toes and claws bluish black; of the two toes directed backwards, the inner toe is only half as long as the outer one; the claws of all the toes greatly curved, strong, and sharp.

The whole length of the specimen described was sixteen inches. The wing from the carpal joint to the end nine inches: the first feather pointed, and only about two inches in length; the second feather about five inches long, also pointed, and equal in length to the ninth; the third shorter than the fourth, fifth, or sixth which are about equal, and the longest in the wing. The two middle feathers of the tail are the longest, the outside feathers the shortest, but all are stiff, and but slightly elastic, the shafts being very thick and strong.

In the female the crimson colour is confined to the back part of the head, and in young males the top of the head is only spotted with red.

INSESSORES.
SCANSORES.

PICIDÆ.



THE GREEN WOODPECKER.

WOODSPITE, RAIN-BIRD, HEW-HOLE, YAFFLE, WHET-ILE, AND WOODWALL.

Picus viridis.

Picus	*viridis,*	*Green*	*Woodpecker,*	Penn. Brit. Zool. vol. i. p. 315.
„	„	„	„	Montagu, Ornith. Dict.
„	„	„	„	Bewick, Brit. Birds, vol. i p. 140.
„	„	„	„	Flem. Brit. An. p. 91.
„	„	„	„	Selby, Brit. Ornith. vol. i. p. 372.
„	„	„	„	Jenyns, Man. Brit. Vert. p. 149.
„	„	„	„	Gould, Birds of Europe, pt. iii.
„	„	„	*Pic vert,*	Temm. Man. d'Ornith. vol. i. p. 391.

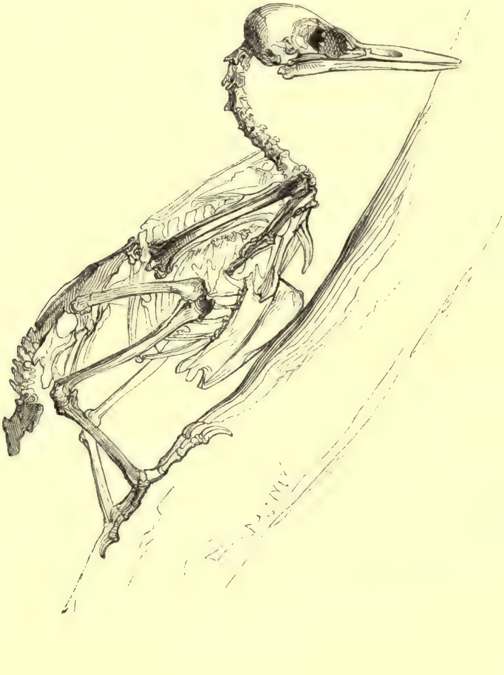
The Green Woodpecker is the most common, and accordingly the best known, among British Woodpeckers, and is found over a great portion of, if not all, the wooded districts of England and Scotland. It is generally seen either climbing the bark of trees in search of its insect food, or passing, by a short, somewhat laboured, and undulating flight, from one tree to another.

When seen moving upon a tree, the bird is mostly ascending in a direction more or less oblique, and is believed to be incapable of descending, unless this action is performed backwards. On flying to a tree to make a new search, the bird settles low down on the bole or body of the tree, but a few feet above the ground, and generally below the lowest large branch, as if to have all its work above it, and proceeds from thence upwards, alternately tapping to induce any hidden insect to change its place, pecking holes in a decayed branch that it may be able to reach any insects that are lodged within, or protruding its long extensible tongue to take up any insect on the surface; but the summit of the tree once obtained, the bird does not descend over the examined part, but flies off to another tree, or to another part of the same tree, to recommence its search lower down nearer the ground.

The tongue and its appendages in our Woodpeckers are admirably adapted to their mode of life. That of the Green Woodpecker has been frequently figured, and a brief description, therefore, may suffice: it is, however, an interesting subject to examine. The great extensibility of the tongue is obtained by the elongation of the two posterior branches or *cornua* of the bone of the tongue, which extending round the back of the head and over the top, have the ends of both inserted together into the cavity of the right nostril. These elongations, forming a bow, are each accompanied throughout their length by a slender slip of muscle, by the contraction of which the bow is shortened, and the tongue pushed forward; another pair of muscles folded twice round the upper part of the trachea, and from thence passing forward, are attached to the anterior part of the tongue, and by their contraction bring the tongue back again. The tongue itself is furnished at the tip with a horny point, and also with four or five short bristle-like hairs on each side which are directed backwards. At each side of the head of the bird, behind and below the external orifice of the ear, is a large and elongated parotid gland, from which a membranous duct passes as far forwards as the point of union of the two bones, forming together the lower mandible, on the inner surface of which the glutinous secretion of these large glands passes out, and may be seen to issue on making slight pressure along the course of the glands. The flattened inner surface of the two bones which are united along the distal part of their lower edge, forms the natural situation of the tongue when at rest within the mandibles; and every time it is drawn into the mouth when the bird is feeding, it becomes covered with a fresh supply of the glutinous mucus. From a close examination of the contents of the stomach of many Green Woodpeckers, I am induced to believe that the point of the tongue is not used as a spear, nor the food taken up by the beak, unless the subject, whatever it may happen to be, is too heavy to be lifted by adhesion.

Insects of various sorts, ants, and their eggs, form the principal food of the Green Woodpecker; and I have seldom had an opportunity of examining a recently killed specimen the beak of which did not indicate, by the earth adhering to the base, and to the feathers about the nostrils, that the bird had been at work at an ant-hill, and this species is therefore more frequently seen on the ground than any other of our Woodpeckers; it is said also to be a great enemy to bees. Bechstein says that the Green Woodpecker will crack nuts.

Another anatomical peculiarity remarkable in the skeleton of the Woodpecker, but admirably adapted to the habits of the bird, is the small size of the keel of the breast-bone. Moderate powers of flight, sufficient to transport the bird from tree to tree, are all that it seems to require; large pectoral muscles with a deep keel to the breast-bone would to this bird be an inconvenience. The advantage of a narrow shallow keel is immediately apparent, on looking at a representation of the skeleton in a climbing position: the low keel allowing the bird to place



its body close to the tree, to bring its centre of gravity in a perpendicular line before the points of support, and thus materially to diminish the labour of, and the strain upon, the muscles of the legs and thighs. The descending position of the bones of the tail indicate the mode by which the stiff points of the tail-feathers are brought into contact with the surface of the bark of the tree to form an accessory prop.

These birds inhabit holes in trees, which they excavate or enlarge for their use, chiefly in the elm or the ash, in preference to those of harder wood. When excavating a hole in a tree for the purpose of incubation, the birds, it is said, will carry away the chips to a distance, in order that they may not lead to a discovery of their retreat, as other birds are known to carry away the egg-shells and mutings of their young birds. The Green Woodpecker makes no nest, but deposits its eggs on the loose, soft fragments of the decayed wood. The eggs are from five to seven in number: smooth, shining, and pure white, one inch two lines and a half in length, by ten lines and a half in breadth. The young birds are fledged in June, and creep about the tree a short distance from the hole before they are able to fly. I have known the young birds to be taken from the tree and brought up by hand, becoming very tame, and giving utterance to a low note not unlike that of a very young gosling. The adult birds also make a low jarring sound, which is supposed to be the call-note of the sexes to each other. Their more common note is a loud sound, which has been compared to a laugh, and they are said to be vociferous when rain is impending, hence their name of Rain-bird; and as it is highly probable that no change takes place in the weather without some previous alteration in the electrical condition of the atmosphere, we can easily understand that birds, entirely covered as they are with feathers, which are known to be readily affected by electricity, should be susceptible of certain impressions, which are indicated by particular actions: thus birds, and other animals,* covered only with the production of their highly sensible skin, become living barometers to good observers. The Green Woodpecker is one of the earliest birds to retire to rest in the afternoon.

I have occasionally, in the History of our Fishes and Birds, endeavoured to give the explanation or derivation of some of the names applied to our British species, and it is hoped that such attempts, though sometimes unsuccessful, may yet be acceptable, and even useful. The various names by which our Green Woodpecker is known in different parts of this country invite observation.

Wood-spite, which I have also seen spelled, Woodspeight, if not intended for our English words, wood, and spite; the first syllable is derived from woad, in reference to the green colour of the bird, and the second syllable is derived from the German word "specht," a Woodpecker: Grünspecht is in Germany the name of our Green Woodpecker.

Rain-bird has been already noticed. Wallis, in his History of Northumberland, observes that it is called by the common people Rain-fowl, from its being more loud and noisy before rain. The Romans called them *Pluviæ aves* for the same reason.

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* Mr. Scrope, in his excellent book on the "Art of Deer-stalking," says, "The Deer, like many other animals, seem to foresee every change of weather; at the approach of a storm they leave the higher hills, and descend to the low grounds, sometimes even two days before the change takes place. Again, at the approach of a thaw, they leave the low grounds, and go to the mountains by a similar anticipation of change."

Hew-hole is sufficiently explained by the well-known habit of the bird.

Yaffle, or Yaffil. The Green Woodpecker is so called in Surrey and Sussex. This name has reference to the repeated notes of the bird, which have been compared to the sound of a laugh. White of Selborne says, "the Woodpecker laughs;" and in the popular poem of the Peacock "At home," the following couplet occurs:—

> "The Sky-lark in ecstacy sang from a cloud,
> And Chanticleer crow'd, and the Yaffil laugh'd loud."

In some parts of Hertfordshire, and of the adjoining county of Essex, the Green Woodpecker is called a Whetile. The word Whittle, is a term at present in use in some northern counties. Brockett, in his Glossary of North-country words, considers it derived from the Saxon "Whytel," a knife. In Yorkshire, and in North America, a whittle is a clasp-knife, and, to whittle,* is to cut or hack wood; the origin and the meaning of this name for the Woodpecker is, therefore, sufficiently obvious:—whytel, whittle, whet-ile, woodhacker.

The terms Woodwele, Woodwale, Woodwall, and Witwall, which are only modifications of the same word, are generally considered to refer to one of the species of our English Woodpeckers, but to which, or, I may add, if to either, there is some doubt. Willughby and Ray apply the name of Witwall to the Greater Black and White, or Greater Spotted Woodpecker; and in the New Forest, Hampshire, at the present day, this same bird is called Woodwall, Woodwale, Woodnacker, and Woodpie. The word occurs occasionally in old ballads:—

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* See Webster's Dictionary, and both Series of the Sayings and Doings of Sam Slick the Clockmaker.

"The Woodwele sang and would not cease,
Sitting upon the spraye,
So loud he wakened Robin Hood
In the green wood where he lay."
Ritson's edition of Robin Hood, vol. i. p. 115.

"In many places Nightingales,
And Alpes* and Finches and Woodwales."
Chaucer, *Rom. of the Rose.*

"There the Jay and the Throstell,
The Mavis menyd in her song,
The Woodwale farde or beryd as a bell
That wode about me rung."
True Thomas.

In the glossary to the work first quoted, the Woodwele is thus described:—"The Golden Ouzle, a bird of the Thrush kind. P." The initial P. is probably intended to refer to the works of Pliny. In the English portion of Ainsworth's Dictionary, the corresponding term for Witwall is *vireo;* and Dr. William Turner, an English physician, and an accurate observer of birds, who wrote in the time of Henry the Eighth, makes *vireo* to be the Golden Oriole, including in his synonymes the Greek word *Chlorion*, also in reference to colour, and the German names Wittwol and Weidwail; but remarking that he had never seen this bird in England, though he had seen it very often in Germany. *Galbula*, another term applied to the Golden Oriole, is in Ainsworth's Dictionary, "a bird which we call a Whittall, or Woodwall, *Mart.*" *Galbula* is a diminutive from *galbus*, signifying yellow. Kilian interprets the Belgic word "weed wael" as *galgulus* (*avis eadem que galbula*, Plin.) *avis lurida*, *oriolus.* He also refers to the German word "wette wal," or "weet wal," which is applied to the Gold Amsell, or Yellow Thrush, two other names for the Golden Oriole. Although these references would seem to identify the Golden Oriole as the Woodwele, yet the remark of Dr. Turner, and our own knowledge of the rarity of the Golden Oriole in England, affords strong presumptive evidence that the "Wood Wele singing from the spray," the bird which woke Robin Hood, could not have been the Golden Oriole. A ballad writer, wishing of course to be generally understood, would introduce some bird of familiar occurrence. Harduin translates *vireo* into *verdier*, which, according to Buffon, is the Greenfinch; and Ainsworth gives Greenfinch as a translation of *vireo*. The Greenfinch certainly does not sing very loud, but your freebooters are probably very light sleepers. In an English and German Dictionary, composed chiefly from Johnson and Adelung, the word corresponding to Woodwall is Grünspecht, which, as before noticed, is our Green Woodpecker. There seems to be no doubt that the colour of the Woodwele was greenish yellow, and this name, with its various modifications, may therefore apply to the Green Woodpecker, the Golden Oriole, or the Greenfinch. The objections to the Green Woodpecker are, that his notes can scarcely in poetical license be called a song; and, moreover, that they are most frequently uttered when the bird is on the wing.

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* An old name for the Bullfinch.

The derivation in the present instance, through the assistance of a learned friend at Cambridge, who is kind enough to interest himself in the character and success of this History of our British Birds, might have been carried much farther, but it may perhaps be considered that enough has already been said here upon this subject.

Though sufficiently common and well known in the wooded districts of England and Scotland, as before observed, I can find no record of the occurrence of the Green Woodpecker in Ireland. It is not a common bird in Holland, though found generally on the European Continent from Scandinavia and Russia to Spain, Provence, Italy and Sicily. The editor of the last edition of Pennant's British Zoology, says, that it is also found in the wooded districts of Greece, but not on the eastern side of that country, which is bare of trees.

Dr. Dickson and Mr. Ross have found this species in great numbers at Trebizond, and have shot them in the country between Trebizond and Erzeroom.

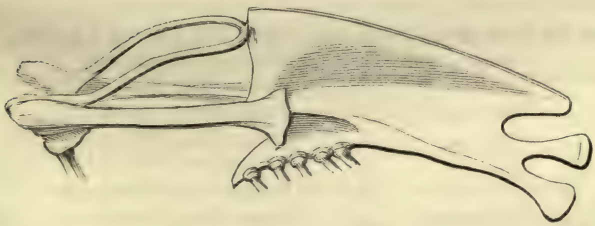
The adult male has the beak of a dark horn-colour, almost black, the base of the lower mandible only being nearly white; the feathers over the nostrils, on the lore, and round the eye, black; the crown of the head and the occiput bright scarlet; the irides white, tinged with pale straw colour; from the base of the lower mandible a mustache extends backwards and downwards, formed of black feathers, with a brilliant scarlet patch along the middle of it; the neck, back, wings, wing-coverts, and scapulars, dark green, tinged with yellow; rump and upper tail-coverts sulphur yellow; wing-primaries greyish black, spotted with white along the whole of the outer web, and on the proximal half of the inner web; the secondaries and tertials uniformly green on the outer web, greyish black spotted with dull white on the inner web; tail-feathers long, stiff, and pointed, the middle pair the longest, the others graduated, in colour greyish black, indistinctly barred across with dull greyish white; the whole of the under surface of the body ash green; legs, toes, and claws, black.

The whole length about thirteen inches. From the carpal joint to the end of the wing, six inches and a half: the first quill-feather short, the second shorter than the seventh, the third, fourth, fifth, and sixth, nearly equal, but the fourth the longest in the wing.

Adult females have less red upon the head, and no red on the black mustache.

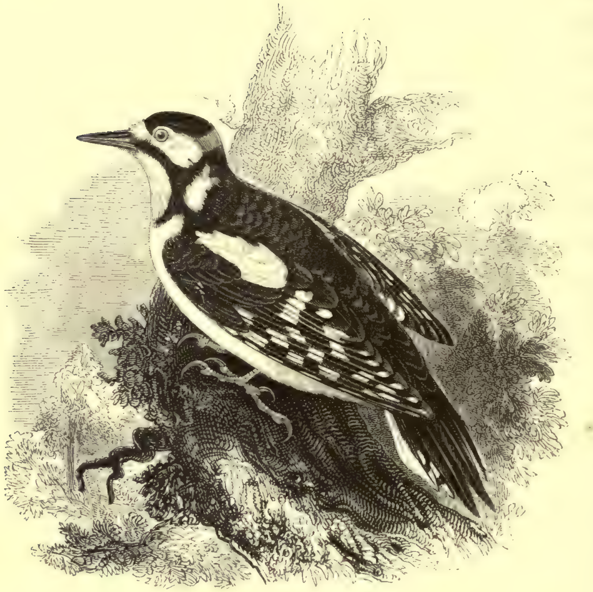
In young birds that have recently quitted the nest, the scarlet colour on the top of the head is mixed with yellow and greyish black, the feathers passing by a change of colour from greyish white to yellow, and afterwards to scarlet; on the mustache of the young male the same changes may be observed; on the back and wings the green feathers are tipped with yellow: all the under surface of the neck and body dull greyish white tinged with ash green, streaked longitudinally on the neck, and transversely on the breast and belly, with greyish black. The green colour on the under surface of the body increases with age.

The vignette below represents the breast-bone of the Green Woodpecker, rather larger than the natural size; the power of flight may be estimated by comparing this bone with that of a Falcon, vol. i. p. 113, and that of an Owl, at p. 137, or with that of the Jackdaw, in the present volume, p. 108, between which bird and the Green Woodpecker there is no great difference in size.



INSESSORES.
SCANSORES.

PICIDÆ.



THE GREAT SPOTTED WOODPECKER.

FRENCH-PIE, AND WOODPIE.

Picus major.

Picus	*major,*	*Great Spotted*	*Woodpecker,*	PENN. Brit. Zool. vol. i. p. 319.
,,	,,	*Greater* ,,	,,	MONTAGU, Ornith. Dict.
,,	,,	*Pied*	,,	BEWICK, Brit. Birds, vol. i. p. 142.
,,	,,	*Greater* ,,	,,	FLEM. Brit. An. p. 91.
,,	,,	*Great* ,,	,,	SELBY, Brit. Ornith. vol. i. p. 375.
,,	,,	,, ,,	,,	JENYNS, Brit. Vert. p. 150.
,,	,,	,, ,,	,,	GOULD, Birds of Europe, pt. x.
,,	,,	*Pic épeiche,*	,,	TEMM. Man. d'Ornith. vol. i. p. 395.

THIS species, next to the Green Woodpecker, is the best known in this country, and is by no means uncommon, particularly in the wooded districts of our midland counties, where it inhabits forests, woods, parks, and gardens. This bird climbs with great ease in all directions about the trunks and limbs of trees, but appears unwilling to be seen, creeping behind a branch on the approach of any observer, and remaining there out of sight. The Great Spotted Woodpecker, or Great Black and White Woodpecker, as it is also sometimes called, like its generic companion the Green Woodpecker, has several names. Willughby and Ray, and others from their example, have called it the Witwall; in some counties it is called the French-pie, and in others the Woodpie.

Confining itself chiefly to woods, and rarely seen on the ground, Mr. Gould says they are sometimes "observed to alight upon rails, old posts, and decayed pollards, where, among the moss and vegetable matter, they find a plentiful harvest of spiders, ants, and other insects; nor are they free from the charge of plundering the fruit trees of the garden, and in fact commit great havoc among cherries, plums, and wall-fruit in general." Their food is insects of all sorts, and probably in all their various stages; and M. Temminck says they will also eat seeds and nuts.

Their flight is short, and performed in a series of undulations. A particular sound made by both the adult birds and also by the young birds of the year, when seeking their own living in autumn, has reference to one of their modes of obtaining food, and is thus explained by the editor of the last edition of Pennant's British Zoology. "By putting the point of its bill into a crack of the limb of a large tree, and making a quick tremulous motion with its head, it occasions a sound as if the tree was splitting, which alarms the insects and induces them to quit their recesses; this it repeats every minute or two for half an hour, and will then fly off to another tree, generally fixing itself near the top for the same purpose. The noise may be distinctly heard for half a mile. This bird will also keep its head in very quick motion, while moving about the tree for food, jarring the bark, and shaking it at the time it is seeking for insects."

These birds inhabit holes in trees, and the females exhibit great attachment to their eggs ; Montagu mentions an instance where "notwithstanding a chisel and mallet were used to enlarge the hole, the female did not attempt to fly out till the hand was introduced, when she quitted the tree at another opening. The eggs were five in number, perfectly white and glossy, weighing about one dram, or rather more. These were deposited two feet below the opening, on the decayed wood, without the smallest appearance of a nest." The eggs are one inch long, and nine lines broad.

The young birds are perfectly fledged and able to shift for themselves by the middle of July.

I have referred to Kensington Gardens as a locality in the vicinity of London rather remarkable for the number of its insectivorous birds. The Woodpeckers are frequently to be seen and heard there, and I remember, some years ago, seeing a family of the young of the species now under consideration, which had been taken and reared by the keeper at the Bayswater gate ; they were climbing over the inside of their cage as it hung against a large tree near the lodge.

This species occurs in all the southern and midland counties of England, but becomes more rare on proceeding northwards : it is found in Lincolnshire and Yorkshire. Mr. Selby says, "In Northumberland, scarcely a year passes without some of these birds being obtained in the months of October and November. This induces me to suppose that they are migratory in some of the more northern parts of Europe, perhaps in Norway and Sweden. They arrive about the same time as the Woodcock, and other equatorial migrants; and generally after stormy weather from the north or north-east. They moult at a late period, as several of those which have come into my hands have been in that state as late as the 10th of November." T. C. Heysham, Esq., has recorded two instances of this bird being obtained in the vicinity of Carlisle, where it is considered a rare species. Sir William Jardine sends me word that it has occurred in Dumfriesshire, and is met with occasionally still farther north. Mr. Selby also says he has seen it in Scotland, on the banks of the river Spey, and amid the wild scenery of the Dee.

Mr. Thompson of Belfast says,* a specimen of *Picus major*, preserved in the Museum of the Royal Dublin Society, was shot in the vicinity of that city a few years since; and in the manuscript notes of the late Mr. Templeton, it is stated that an individual of the same species was sent to him in August 1802, from the county of Londonderry.

This species is found in Denmark, Norway, Sweden, and Russia, and from thence southward over the European continent to Italy. The Zoological Society have received this bird from Oporto, and it is found in Corfu and Sicily. Mr. H. E. Strickland says that it is common in Smyrna.

The old male has the beak about as long as the head, of a dark and shining horn colour, with a few greyish hair-like feathers projecting over the nostrils; forehead, ear-coverts, and a circle round the eye, dull dirty white; irides red; top of the head dark bluish black; occiput bright scarlet; nape of the neck black,—this colour passing forward, above a white spot, by a narrow stripe, which at the side of the neck divides, one stripe passing forwards to the base of the beak, the other backwards towards the wings; the back, rump, and tail-coverts, black; the scapulars white, forming an elongated patch; the smaller and the outer larger wing-coverts black; the inner larger wing-coverts white, and partly hid by the scapulars; the quill-feathers black, with from two to five well-defined, rather elongated white patches on the outer web of each feather, and rounded patches of white on the inner web, the two middle tail-feathers the longest, and wholly black, pointed, and somewhat worn at the ends; the two next in succession, on each side, also black, tipped with white at the end, and similarly pointed; the next black and white, with some black forming bars on the white; the outer feather on each side with the ends rounded and entire. The throat, neck, breast, and belly, dirty white; vent and under tail-coverts red.

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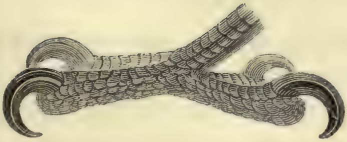
* Proceedings of the Zool. Soc. for 1835, p. 79.

The whole length of an adult bird nine inches and a half. From the carpal joint to the end of the wing five inches and a quarter: the first feather very short; the second shorter than the seventh, but longer than the eighth; the third, fourth, and fifth, as long as the seventh; the sixth feather the longest in the wing.

The adult female has no red colour on the head or occiput.

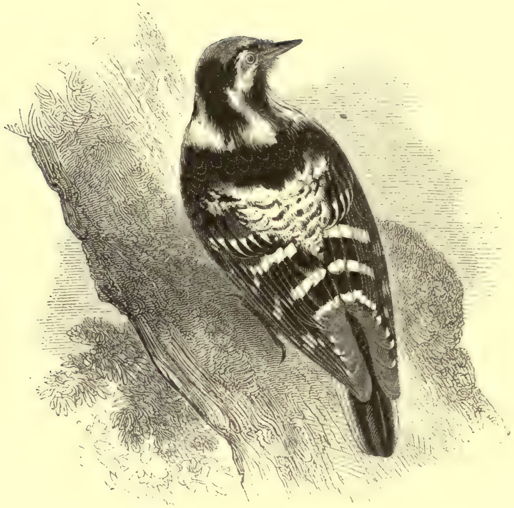
The young birds of the year, of both sexes, are a little smaller in size, and though not differing in plumage from the parent birds in other respects, they have the top of head red, the occiput black, and these colours they retain till their first moult, which probably from the observation of Mr. Selby, is not completed till late in the year. This red colour covers the whole of the top of the head, but is not so bright in tint as the occipital patch of the old male, and is sometimes mixed with a few black feathers. In this state of plumage this young bird has been confounded with, and quoted as the *Picus medius* of Linnæus, a black and white Woodpecker of the Continent of Europe, which there is no reason to believe has ever been killed in this country.

The figure below represents the character and position of the toes in the Woodpeckers.



INSESSORES.
SCANSORES.

PICIDÆ.



THE LESSER SPOTTED WOODPECKER.

THE BARRED WOODPECKER, AND HICKWALL.

Picus minor.

Picus	*minor,*	*Least*	*Spotted*	*Woodpecker,*	Penn. Brit. Zool. vol. i. p. 322.
„	„	*Lesser*	„	„	Montagu, Ornith. Dict.
„	„	*The Barred,*		„	Bewick, Brit. Birds, vol. i. p. 144.
„	„	*Lesser*	*Spotted*	„	Flem. Brit. An. p. 90.
„	„	„	„	„	Selby, Brit. Ornith. vol. i. p. 379.
„	„	„	„	„	Jenyns, Brit. Vert. p. 151.
„	„	„	„	„	Gould, Birds of Europe, pt. xii.
„	„	*Pic épeichette,*		„	Temm. Man. d'Ornith. vol. i. p. 399.

The Lesser Spotted Woodpecker, Little Black-and-White Woodpecker, and Barred Woodpecker, as it is also sometimes called, has the characters and actions, as well as the colours of the Black-and-White Woodpecker, last described, while its small size, and its retiring habits, enable it to escape observation, so that it is generally considered to be much more rare. It is heard to make the same sort of jarring noise as the other Woodpeckers, but not so loud; it is said to be most partial to woods of beech and oak, and also to frequent the tops of large elms. It chooses small holes in trees, as an obvious security against the intrusion of birds larger than itself, and Colonel Montagu mentions having in one instance found five eggs, deposited on the rotten wood, without any nest, at a considerable distance below the aperture, which corresponded with the size of the bird, but did not appear to have been recently made. The eggs are smooth, of a delicate spotless flesh-coloured tint, before they are blown, the colour of the yelk appearing through the transparent albumen and thin shell; but when blown, the egg-shells are thin, of a pure and shining white, nine lines and a half in length, by seven lines in breadth, and very similar to the eggs of the Wryneck.

The food of this species is small insects, which they occasionally seek among long grass on the ground, but are generally seen examining the bark of trees, searching the branches rather than the trunks, from the crevices in which they withdraw such as they find within the reach of their long tongue, and the glutinous secretion with which it is covered. Mr. Gould, in his birds of Europe says, this little Woodpecker is frequently to be seen searching for insects on the moss-covered branches of orchard fruit trees.

This species is not uncommon around London, and may be seen in Kensington Gardens, and I find notices of its occurrence in Buckinghamshire, Berkshire, Wiltshire, Dorsetshire, and Cornwall; it has also been noticed in Gloucestershire, Herefordshire, Warwickshire, Shropshire, and as far north, on the west side, as Lancashire. I am not aware that it has been found in Ireland. From London eastward and northward it has been found in Essex, Suffolk, Norfolk, Cambridgeshire, Leicestershire, Lincolnshire, and as I am informed by Mr. Thomas Allis, in Yorkshire. Further northward it is more rare; but Sir Robert Sibbald includes *Picus varius minor* as a bird of Scotland, and this is a name by which our Little Woodpecker, the smallest of the European species, was designated by some authors. Professor Nilsson includes this species in his Fauna of Scandinavia, giving representations of both sexes; and M. Vieillot says, that it is found as far as the eastern part of Siberia. On the southern part of the European continent it is found, though sparingly, as far as Rome, and in Sicily.

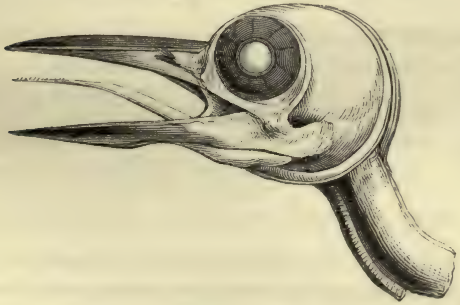
The male has the beak shorter than the head, angular, pointed, and black; hair-like feathers at the base of the beak, projecting over the nostrils, greyish brown; forehead dull white; crown of the head bright scarlet; occiput and nape black; irides reddish hazel; cheeks, ear-coverts, and each side of the nape down to the scapulars, white; under the ear-coverts on each side a patch of black; upper part of the back and the scapulars black; middle of the back white, barred transversely with black; upper tail-coverts black; upper part of the wings black; both sets of wing-coverts black, tipped with white; quill-feathers greyish black, with angular spots of white on the outer webs, and rounded spots of white on the inner webs, forming four conspicuous and almost regular white bars; the four middle tail-feathers black, somewhat pointed and stiff; the next on each side tipped with white; the other two on each side white barred with black; chin, throat, and all the under surface of the body dirty white; the sides of the breast marked with a few descending black lines; under tail-coverts with a few black spots ; legs, toes, and claws, lead colour.

The whole length five inches and three-quarters. From the carpal joint to the end of the wing three inches and three-eighths : the first feather very short ; the second the same length as the seventh ; the third, fourth, and fifth, nearly equal in length, but the fourth rather the longest in the wing.

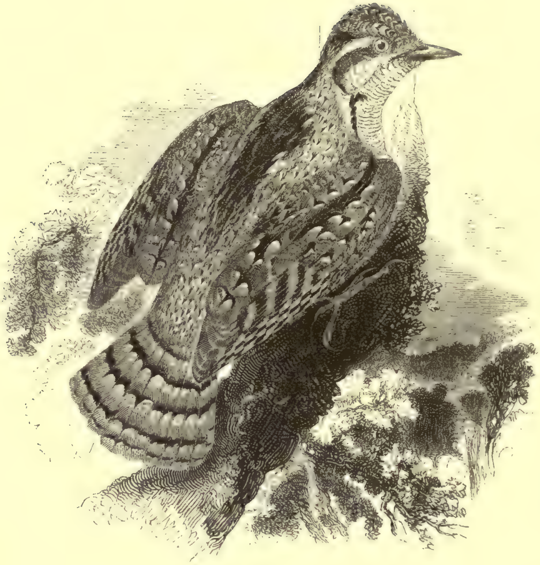
The top of the head in the female is of a dirty brownish white, without any appearance of red feathers ; the white patches about the ear-coverts occupy more space than in the males, and the under surface of the body is tinged with dull pale brown.

Young male birds of the year assume the red colour on the top of the head during their first autumn.

The vignette below represents the tongue and its glands in the head of the Great Spotted Woodpecker, of the natural size, as seen when the skin is removed. The structure is the same in the Lesser Spotted Woodpecker, except that all the parts in the latter are much smaller.



INSESSORES. *PICIDÆ.*
SCANSORES.



THE WRYNECK.

Yunx torquilla.

Yunx	*torquilla,*	*The*	*Wryneck,*	PENN. Brit. Zool. vol. i. p. 312.
,,	,,	,,	,,	MONTAGU, Ornith. Dict.
,,	,,	,,	,,	BEWICK, Brit. Birds, vol. i. p. 134.
,,	,,	*Common*	,,	FLEM. Brit. An. p. 92.
,,	,,	,,	,,	SELBY, Brit. Ornith. vol. i. p. 381.
,,	,,	,,	,,	JENYNS, Brit. Vert. p. 152.
,,	,,	,,	,,	GOULD, Birds of Europe, pt. i.
,,	,,	*Torcol ordinaire,*		TEMM. Man. d'Ornith, vol. i. p. 403.

YUNX. *Generic Characters.*—Beak short, straight, conical; the tongue long, worm-like, with a horny point; nostrils basal, lateral, partly closed by a membrane. Wings moderate, the second quill-feather the longest. Tail-feathers flexible. Feet with two toes in front, and two behind; the anterior pair joined at their base; the hind toes unconnected.

The Wryneck is a common bird, and a well known summer visiter to this country, arriving in the first or second week of April, and departing by the end of August or early in September. As the Wryneck makes its appearance here about the same time as the Cuckoo, it has from some supposed connection with that bird acquired the names of Cuckoo's Mate, and Cuckoo's Maid. Pennant says the Welsh name for this bird (*Gwâs y gog*) means also Cuckoo's attendant; but it is scarcely necessary to add that, except in the circumstance of the two species arriving here, and again departing hence, about the same period of each spring and autumn, these two birds have indeed scarcely any other point of similarity between them. The Wryneck is, in fact, rather solitary in its habits, being very seldom seen associating with, or even near, any other bird than its own single partner, and that too but for a very limited portion of the year.

Without any rich or attractive colours in its plumage, the Wryneck is still a handsome bird from the singularly beautiful manner in which the various markings and the shades of brown and grey are distributed. It is provided with a long tongue, and with feet similar to those of the Woodpeckers, but has not the stiff tail-feathers like those birds, and is, as might be expected, less of a climber than the species of the genus *Picus*. It frequents small copses, plantations, orchards, and fields enclosed with tall hedges.

This bird is called a Wryneck from the habit it exhibits of moving its head and neck in various directions, sometimes describing parts of circles, at others from side to side, with an undulating motion not unlike the actions of a snake, and in some of the counties in England this bird is called the Snakebird from this circumstance. When found in its retreat in the hole of a tree, it makes a loud hissing noise, sets up an elongated crest, and writhing its head and neck towards each shoulder alternately, with grotesque contortions, becomes an object of terror to a timid intruder, and the bird taking advantage of a moment of indecision, darts with the rapidity of lightning from a situation whence escape seemed impossible.

These birds feed on caterpillars and various other insects, and are often seen on the ground near ant-hills, consuming as food large quantities of the ants and their eggs. Bechstein says the Wryneck will eat elderberries. The anatomical construction of the tongue and its appendages in the Wryneck, and the consequent mode of taking its food, like the Woodpeckers, will amply repay the closest examination. By an elongation of the two posterior branches of the bones of the tongue, and the exercise of the muscles attached to them, this bird is able to extend the tongue a very considerable distance beyond the point of the beak; the end of the tongue is horny and hard; a large and long gland is situated at the under edge of the lower jaw on each side, which secretes a glutinous mucus, and transfers it to the inside of the mouth by a slender duct. With this glutinous mucus the end of the tongue is always covered, for the especial purpose of conveying food into the mouth by contact. So unerring is the aim with which the tongue is darted out, and so certain the effect of the adhesive moisture, that the bird never fails in obtaining its object at every attempt. So rapid, also, is the action of the tongue in thus conveying food into the mouth, that the eye is unable distinctly to follow it, and Colonel Montagu, who had an opportunity of observing this bird feed while confined in a cage, says, that an ant's egg, which is of a light colour, and more conspicuous than the tongue, had somewhat the appearance of moving towards the mouth by attraction, as a needle flies to a magnet. In consequence of this bird feeding frequently at the ant-hills, the author of the Journal of a Naturalist has observed, that its long glutinous tongue collects much of the soil of the heaps, and its stomach contains a larger portion of grit than is usually met with in that of other birds.

The Wryneck makes little or no nest, but deposits its eggs on the fragments of decayed wood within the hole of a tree. The eggs are from six to nine or ten in number, white, smooth, and shining, nine lines and a half long, by seven lines in breadth.

Mr. Salmon, when residing in Norfolk, recorded a singular instance of the attachment of this bird to a particular retreat, in the following terms:—"I wished, last spring, to obtain the eggs of the Wryneck to place in my cabinet, and accordingly watched very closely a pair that had resorted to a garden in this village for the purpose of incubation; I soon ascertained that they had selected a hole in an old decayed apple tree for that purpose, the entrance to which was so small as not to admit my hand. The tree being hollow and decayed at the bottom near the ground, I was enabled to reach the nest by putting my arm upwards, and I found, on withdrawing the nest, that the underneath part of it was composed of moss, hair, &c., having every appearance of an old nest of the Redstart's of the preceding summer; which, I suspect, was the case: the upper part was made of dried roots. The nest did not contain any eggs, and I returned it by thrusting it up in the inside of the tree. On passing by the same tree about a week afterwards, my attention was arrested by observing one of the birds leaving the hole, upon which I gently withdrew the nest, and was much gratified at finding it

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[*] Magazine of Natural History, vol. vii. p. 465.

contained five most beautiful glossy eggs, the shells of which were perfectly white, and so transparent that the yelks shone through, giving them a delicate pink colour, but which is lost in the blowing. I replaced the nest, and visited it during the ensuing week, and was induced, out of curiosity, to examine it again, when, to my astonishment, I found the birds had not deserted the hole, she having laid six more eggs since. I took these away, and was obliged to keep them, as I was only able to replace the nest by again thrusting it up in the inside of the tree as before, which I did. I again visited the spot in the following week, and found that they had still pertinaciously adhered to their domicile, having further laid four more eggs. I repeated the experiment; but not having an opportunity of visiting the tree until ten days afterwards, I thought at the time that the nest was abandoned, and was not undeceived until I had again withdrawn the nest, having taken the precaution of endeavouring to frighten the old bird off should she be on the nest, which I found was the case, she suffering me to pull the nest to the bottom of the tree before she attempted to escape: there were seven eggs which were slightly sat upon. What appears to me extraordinary is that the bird should suffer her nest to be disturbed five times, and the eggs (amounting altogether to twenty-two) to be taken away at four different periods within the month before she finally abandoned the spot she had selected."

The young birds are easily tamed, and are great favourites with boys in this country, but more particularly so in France, where it is customary to tie a piece of thin string to one of the legs of the bird, and carrying it from one tree to another, allow it to search the bark for insects; it climbs with equal facility over any part of the clothes.

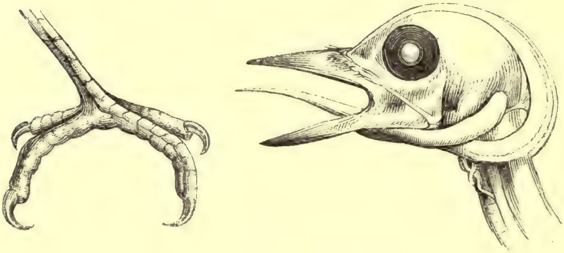
The Wryneck is very common during summer in the south-eastern counties of England; but it decreases in numbers on proceeding to the westward: it is rare in Cornwall, and has not been ascertained to visit Ireland. Northward it is also scarce; it is rare in Yorkshire. Mr. Selby has ascertained that a few only appear every year in Northumberland. There are records of this bird having been killed twice in Berwickshire, once in Fifeshire, and in one or two other instances in Scotland. Müller and M. Nilsson include the Wryneck among the birds of Denmark and Sweden, the latter author noticing that it makes its appearance in Sweden at the beginning of May. M. Temminck says it is a rare bird in Holland; but it is common in Germany, France, Spain, Provence, Italy, Corfu, and Sicily, during summer. Mr. Gould has received specimens from the Himalaya mountains,—a locality remarkable for European forms among its animal inhabitants. Mr. Blyth has obtained it in the vicinity of Calcutta, and it is found in China. M. Temminck includes it in his Catalogue of the Birds of Japan; and M. Vieillot says it is found in Kamtschatka. The Wryneck, when quitting the southern part of the European continent in autumn, goes to north Africa, and the warm parts of western Asia.

The adult bird has the beak brown; the irides hazel; the top of the head greyish brown, barred across with streaks of darker brown and white; neck, back, rump, and upper tail-coverts, grey, speckled with brown; from the occiput down the middle line of the back of the neck, and between the scapulars, a streak of dark brown mixed with black; the wings brown, speckled with lighter yellow brown, and a few white spots; the primary quill-feathers barred alternately with pale yellow brown and black; the tertials on the upper surface marked with a descending line of black; upper surface of the tail-feathers mottled with grey and brown, and marked with four irregularly transverse bars of black; chin, throat, ear-coverts, and neck in front, pale yellow brown, with narrow transverse black lines; breast, belly, sides, and under tail-coverts, dull white, tinged with pale yellow brown, and spotted with black; under surface of tail-feathers pale greyish brown, speckled and barred with black; legs, toes, and claws, brown.

The whole length of the bird seven inches. From the carpal joint to the end of the wing, three inches and one quarter; the first and third quill-feathers nearly equal in length, longer than the fourth, but a little shorter than the second, which is the longest in the wing.

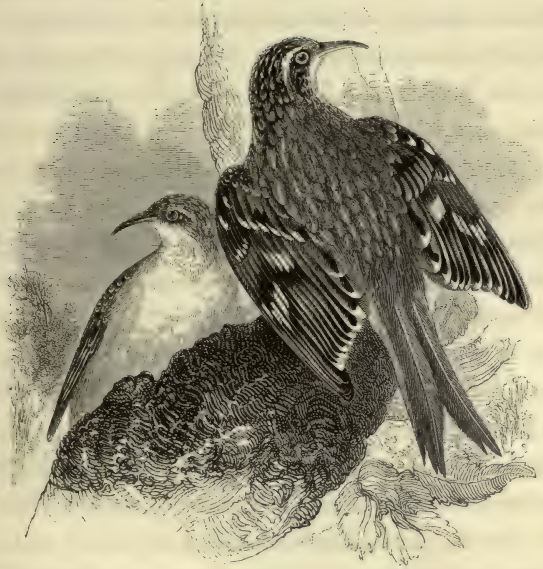
The female is rather larger than the male, and the colours of her plumage are less pure and bright. M. Temminck says the dark band on the neck and back is shorter.

The vignette here inserted represents the foot and the head of the Wryneck, both of the natural size; the foot, as referred to in the generic characters, the head as described at page 160. Of the two small thread-like muscles seen at the throat on the side of the windpipe,—one, with its fellow on the other side of the neck, belongs to the trachea itself; the other assists in drawing the tongue back into the mouth after it has been thrust forward.



INSESSORES.
SCANSORES.

CERTHIADÆ.



THE COMMON CREEPER.

Certhia familiaris.

Certhia	*familiaris,*	*Familiar*	*Creeper,*	PENN. Brit. Zool. vol. i. p. 345.
,,	,,	*Common*	,,	MONTAGU, Ornith. Dict.
,,	,,	*The*	,,	BEWICK, Brit. Birds, vol. i. p. 152.
,,	,,	*Common*	,,	FLEM. Brit. An. p. 88.
,,	,,	,,	,,	SELBY, Brit. Ornith. vol. i. p. 388.
,,	,,	,,	,,	JENYNS, Brit. Vert. p. 152.
,,	,,	,,	,,	GOULD, Birds of Europe, pt. xix.
,,	,,	*Le Grimpereau,*		TEMM. Man. d'Ornith. vol. i. p. 410.

CERTHIA. *Generic Characters.*—Beak of moderate length, curved downwards, slender, and pointed; tongue short; nostrils basal, lateral, the orifice longitudinal, elongated, partly covered by a membrane. Wings of moderate length; the first feather very short, the fourth feather the longest in the wing. Tail-feathers long, stiff, pointed, and slightly curved downwards. Feet with three toes before, one behind; the claws long, curved, and sharp; the outer toe united by a membrane to the middle toe at its base.

The little Common Creeper, with the Wren, the Golden Crests, and the Chiff Chaffs, are among the smallest of our British Birds; and the first of these, the subject of the present article, though rather numerous as a species, is not very readily distinguishable in its natural haunts when climbing the trunks and branches of trees, partly from the small size and brown colour of the bird itself, and partly from its habit, when approached, of shifting round to the opposite side of the stem, like the Woodpeckers. The little Creeper, aided by its long, curved, and sharp claws, and assisted also by twelve rather elongated and stiff tail-feathers, is an excellent climber, running rapidly in any direction over the rough bark, searching for small insects of all sorts, picking them out of the various crevices with its slender beak, and having traced its course over one tree, takes flight to the next for the same purpose, generally beginning low down towards the base of the tree. This bird inhabits groves, plantations, and parks, appearing to be partial to the examination, in rapid succession, of a number of trees planted near each other, as when forming an avenue.

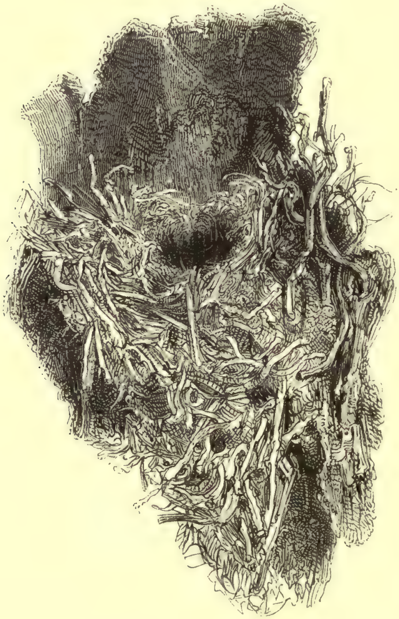
The Creeper makes its nest in a hollow tree, generally for security choosing one with a very small external aperture, but sometimes forming its nest on the inner side of the loose bark of a decayed tree: the vignette at the end exhibits an instance of a nest of this latter sort, for the opportunity of figuring which I am indebted to the kindness of T. F. Robinson, Esq., of Havering Atte Bower, Essex: the nest was taken on the estate attached to the Bower House. It is supported on the inner surface of a thick piece of the bark of an elm which has been detached from the tree, and thus affords the view of the nest here given. The nest itself is formed on the outer surface with small twigs, within which there is a thick layer of fine grass mixed up and lined with black wool, and a few small dark-coloured feathers. The Creeper is an early breeder, laying from seven to nine eggs in the month of April: the eggs measure eight lines in length, and five lines and a half in breadth: they are white, with a few pale red spots, often confined to the large end only. The notes of the Creeper are pleasing, and not unlike those of the Gold Crested Regulus.

The Creeper is distributed generally over England, and is not a migratory bird as has been supposed; Mr. Thompson also sends me word that it is resident in certain localities in Ireland. Mr. Selby says it is abundant all the year in Northumberland; and he has seen it at Blair in Athole, and at Dunkeld. Mr. Macgillivray says it is common about Edinburgh. Müller includes it in his birds of Denmark; and M. Nilsson says it is not uncommon in Sweden. It is rare in Russia and Siberia; but is common from Germany to Italy and Sicily.

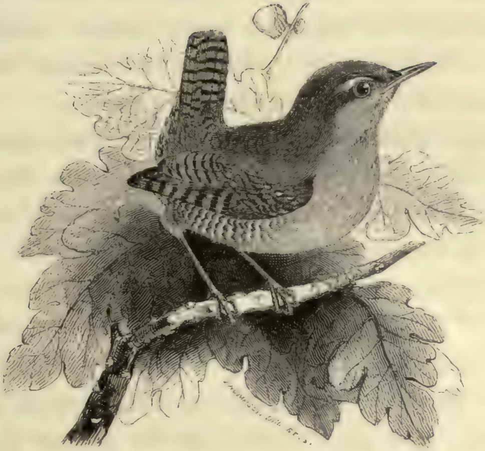
According to the concurring testimony of Wilson, C. L. Bonaparte, Sir William Jardine, Audubon, Nuttall, and others, our Creeper is found throughout the United States of North America, where it is called the Brown Creeper; but as this bird was not met with by Dr. Richardson, it is probable that it does not extend its range so far north as the Fur Countries.

The beak of this species is about as long as the head, curved downwards, slender, and pointed; the upper mandible dark brown, the lower one pale brownish white: the irides hazel; over the eye a light-coloured streak; upper part of the head dark brown, the centre of each feather being pale wood brown; back dark brown, streaked with light greyish brown; rump reddish tawny; wing-feathers brown; wing-coverts tipped with dull white; primaries barred with pale brown and greyish black; tertials with a dark central stripe, and tipped with greyish white; tail-feathers reddish brown, stiff, pointed, and slightly bent downwards; chin, throat, breast, and belly, white; but generally bearing the appearance of being soiled by contact with the exposed surface over which the bird had climbed; all the plumage thick, soft, and silky; legs, toes, and claws, light brown.

The whole length of the bird rather more than five inches. From the carpal joint to the end of the wing, two inches and three-eighths: the first feather very short; the second nearly half an inch shorter than the third; the third, fourth, fifth, and sixth, nearly equal in length, but the fourth rather the longest feather in the wing.



INSESSORES. *CERTHIADÆ.*
SCANSORES.



THE WREN.

Troglodytes vulgaris.

Sylvia troglodytes,	*The Wren,*	PENN. Brit. Zool. vol. i. p. 516.
Motacilla ,,	*Common* ,,	MONTAGU, Ornith. Dict.
,, ,,	*The* ,,	BEWICK, Brit. Birds, vol. i. p. 272.
Troglodytes vulgaris,	*Common* ,,	FLEM. Brit. An. p. 73.
,, ,,	*Europæus* ,,	SELBY, Brit. Ornith. vol. i. p. 390.
,, ,,	,, ,,	JENYNS, Brit. Vert. p 153.
,, ,,	*The* ,,	GOULD, Birds of Europe, pt. v.
Sylvia troglodytes,	*Troglodyte ordinaire,*	TEMM. Man. d'Ornith. vol. i. p. 233.
Troglodytes vulgaris,	,, ,,	,, Supplt. p. 160.

TROGLODYTES. *Generic Characters.*—Beak very slender, slightly curved, pointed, the edges of the mandibles entire, without any depression or notch. Nostrils oval, covered with a membrane. Wings very short, concave, rounded; the first feather rather short, the fourth or fifth feather the longest. Tail short. Feet rather long, slender; the middle toe united at the base to the outer toe, but not to the inner toe.

OUR little established favourite, the Wren, was formerly included among the Warblers; but the similarity in the habits, and the general resemblance in the colours of the plumage of certain species, limited in numbers, but distributed over Europe, Asia, Africa, and America, have induced modern ornithologists to adopt the genus *Troglodytes*, first proposed for them by Baron Cuvier; and M. Temminck, as will be seen by the quotation from his Supplement, coincides in the propriety of this view.

Among our small birds there is scarcely one that is better known, or more secure by privilege, than the little Wren; frequenting gardens close to our houses, and occasionally taking shelter in out-buildings, its confidence, like that of the Robin, appears to have induced and insured its protection. It creeps mouse-like from our sight through hedges and underwood, occasionally only taking wing for a short distance, and again disappears from our view. This little bird sings throughout the greater part of the year with a shrill and lively strain, and even

> "When icicles hang dripping from the rock,
> Pipes his perennial lay;"

enduring a frosty winter's night by uniting and roosting in company in some sheltered hole of a wall or under thatch. Sir William Jardine and Mr. Selby both mention the circumstance of several of these diminutive birds passing the night together in the same aperture; and the Hon. W. Herbert says that in severe weather they frequently roost in cow-houses, where the confined cattle keep them warm.

The Wren begins to make a nest early in spring, and sometimes fixes it under the thatch of a building, against the side of a moss-covered tree, or close to an impending bank that secures it from the rain; but what is remarkable, says Montagu, "the materials of the nest are generally adapted to the place: if built against the side of a hayrick, it is composed of hay; if against the side of a tree covered with white moss, it is made of that material; and with green moss if against a tree covered with the same, or in a bank. Thus instinct directs it for security." Mr. Jesse mentions in his Gleanings, "that he has a Wren's nest in his possession, built amongst some litter thrown into a yard. It so nearly resembled the surrounding objects, that it was only discovered by the birds flying out of it. Some of the straws of which it is composed are so thick, that one wonders how so small a bird could have used them." Without wishing to detract from the character of the Wren for intelligence, I cannot, however, but believe that the proximity of materials may frequently influence the choice of situation and substance. In the eighth volume of the Magazine of Natural History, a correspondent says, in watching a pair of Wrens building their nest in an old road, I noticed that one confined itself entirely to the construction of the nest, which it never left for a moment; whilst the other was as incessantly passing and repassing with materials for the structure. These materials, however, this helper never once attempted to put into their places; they were always regularly delivered to the grand architect that was employed in constructing the building.

The nest is large, in reference to the small size of the bird, generally oval in shape, domed over the top, with a small hole at one end or on the side; the lining is mostly composed of feathers. The eggs are usually from seven to ten in number, but a larger quantity has been assigned to them. They measure seven lines and a half in length, by six lines in breadth: they are white, with a few pale red spots, but sometimes without any spots. The young are hatched after about ten day's incubation, during which time the male feeds the female while she remains on the eggs, and afterwards both parents are most assiduous in supplying their numerous offspring with insects in their various states and worms. In reference to the depth of the nest, and the number of young ones by which it is sometimes occupied,—for it is said that as many as sixteen have been found in one nest,—a remark by Willughby has been thus paraphrased by Grahame in his poem on the birds of Scotland,—

> "But now behold the greatest of this train
> Of miracles, stupendously minute;
> The numerous progeny, claimant for food
> Supplied by two small bills, and feeble wings
> Of narrow range; supplied—ay, duly fed—
> Fed in the dark, and yet not one forgot!"

The Wren produces two broods in the season.

This little bird is generally dispersed over England; and Mr. Thompson informs me that it is common throughout Ireland; it is also found in Scotland, in Orkney, and in Shetland. M. Nilsson says it is resident in Sweden; and it is by the Fabers considered as an inhabitant of the Faroe Islands, of Iceland, and of Greenland. It is even more abundant in the northern than in the central parts of Europe. It is however resident in Spain and Italy all the year, and is found in Corfu, Sicily and Crete. Mr. H. E. Strickland says it is common at Smyrna; and the Zoological Society have received specimens from Trebizond.

Mr. Thompson in his notices on the Birds of Ireland, thus refers to an annual custom still practised against the poor little harmless Wren in the south of Ireland. Smith, in his "History of Cork," written about a century ago, remarks, as the Wren makes but short flights, and when driven from the hedges is easily run down, to hunt and kill him is an ancient custom of the Irish on St. Stephen's day. The late Mr. T. F. Neligan of Tralee communicated the following note upon this subject in 1837. To hunt the

Wren is a favourite pastime of the peasantry of Kerry on Christmas day. This they do, each using two sticks, one to beat the bushes, the other to fling at the bird. It was the boast of an old man, who lately died at the age of one hundred, that he had hunted the Wren for the last eighty years on Christmas day. On St. Stephen's day the children exhibit the slaughtered birds on an ivy-bush decked with ribbons of various colours, and carry them about, singing the well-known song, commencing

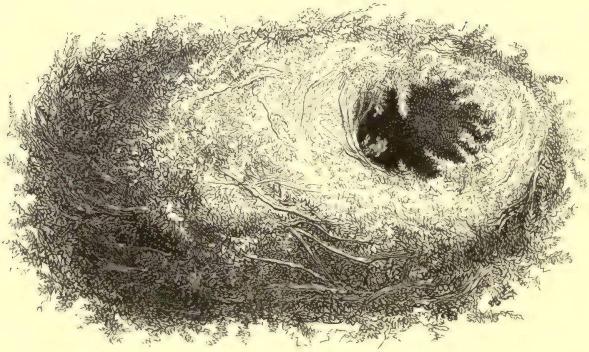
> "The Wren, the Wren, the king of all birds," &c.

and thus collect money to "bury the Wren." Mr. R. Ball informs me that this persecution of the bird in the south is falling into disuse, like other superstitious ceremonies. In Dr. William H. Drummond's "Rights of Animals" the cruelty practised towards the Wren in the south of Ireland (for in the north the practice is quite unknown) is dwelt upon, and a tradition narrated, attributing its origin to political motives. In the first number of Mr. and Mrs. S. C. Hall's "Ireland," a very full and well told account of the "hunting of the Wren" appears. The legend there given as current among the peasantry, is not, however, confined to them, for Mr. Macgillivray, in his British Birds, apparently without knowing anything of the Irish fable, relates the very same as told by the inhabitants of the Hebrides, and a detailed account of the Wren being called a King-bird over a considerable part of the European Continent will be found in one of the volumes of the Library of Entertaining Knowledge, entitled the "Habits of Birds," page 49.

The beak is rather shorter than the head, slender, slightly curved and pointed; the upper mandible dark brown, the under mandible pale wood brown; the irides hazel; over the eye and ear-coverts a streak of pale wood brown; the top of the head, neck, and back, reddish brown, barred transversely with narrow streaks of dark brown; the feathers of the wings and tail rather more rufous in colour than those of the back, and the dark bars are more distinct; the greater wing-coverts with three or four small, round, bead-like spots of white; primaries barred alternately with tawny brown and black; chin and throat plain greyish buff, becoming more brown on the belly; flanks, and under tail-coverts, reddish brown, indistinctly barred with darker brown; the under tail-coverts have tips of dull white; legs, toes, and claws light brown.

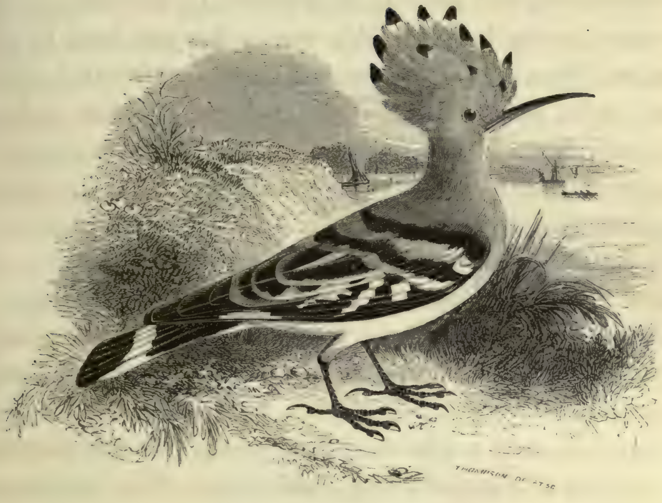
The whole length of the bird rather less than four inches. From the carpal joint to the end of the wing, one inch and seven-eighths: the first wing-feather only half as long as the second: the second the same length as the seventh; the third, fourth, fifth, and sixth, nearly equal in length, but the fourth rather the longest.

The female, according to M. Temminck, is the smaller bird, rather more red in colour, and the transverse bars less distinct.



INSESSORES.
SCANSORES.

CERTHIADÆ.



THE HOOPOE.

Upupa epops.

Upupa	*epops,*	*Common*	*Hoopoe,*	Penn. Brit. Zool. vol. i. p. 342.
"	"	"	"	Montagu, Ornith. Dict.
"	"	*The*	"	Bewick, Brit. Birds, vol. i. p. 148.
"	"	*Common*	"	Flem. Brit. An. p. 89.
"	"	*The*	"	Selby, Brit. Ornith. vol. i. p. 393.
"	"	"	"	Jenyns, Brit. Vert. p. 153.
"	"	"	"	Gould, Birds of Europe, pt. v.
"	"	*La Huppe,*		Temm. Man. d'Ornith. vol. i. p. 415.

Upupa. *Generic Characters.*—Beak longer than the head, slightly bent, slender, triangular, higher than broad. Nostrils basal, lateral, oval, partly concealed by the feathers on the forehead. Wings of moderate size; the fourth and fifth quill-feathers the longest. Tail of ten feathers, square at the end. Toes three in front, one behind; the outer and middle toe united as far as the first joint; claws short, and but slightly curved.

So remarkable is the appearance of the Hoopoe, that a specimen of the bird having been once seen, it is not likely to be forgotten. It can scarcely be considered a very rare bird, since hardly a season passes but one or more examples are obtained, and there is not a county on our southern or eastern coasts in which this species has not been killed several times. Though a summer visiter from North Africa, and going even to the North of Europe, it seldom makes its appearance in this country till after the breeding season is over; and the period of the year in which this bird most commonly occurs is in autumn. To this, however, a few exceptions are recorded. Dr. Latham had a young bird sent him on the 10th of May, 1786. Montagu mentions that a pair in Hampshire left a nest they had begun; and Mr. Jesse, in the third volume of his Gleanings in Natural History, says, that "some years ago a pair of Hoopoes built their nest, and hatched their young, in a tree close to the house at Park-end, near Chichester." They build constantly in hollow trees, collecting a few grass bents and feathers, upon which from four to six or seven eggs are deposited: these are of a uniform pale lavender grey, one inch and half a line long, by eight lines in breadth. These birds pass much of their time in the day upon the ground, appearing to prefer low and moist situations near woods, where they search for insects, upon which they principally subsist. I have had two oportunities of examining the stomach of the Hoopoe, when killed in this country, one of which contained the remains of small coleopterous insects, the other was partly filled with the skins of caterpillars of two different species. Bechstein, in his Cage Birds, has given an interesting account of the habits of these birds in confinement, and Mr. Blyth has described, in the second volume of the New Series of the Magazine of Natural History, the actions of five or six of these birds, which were alive in London in the year 1838. I am indebted to

Mr. Bartlett for the opportunity of observing a living specimen, a fine male, now in his possession. This bird is quite tame, and when unexcited, the high crest falls flat over the top of the head, and covers the occiput; it takes a mealworm from the hand very readily, nibbles and pinches it between the ends of the mandibles, then putting it on the ground, strikes it several blows with the point of the beak; when the insect is apparently dead or disabled it is again taken up, and by a particular motion of the head, which is thrown backward, and the beak opened, the mealworm drops into the gape of the mouth and is swallowed. The call for another is a sharp note; but it also utters at times a sound closely resembling the word, hoop, hoop, hoop,* but breathed out so softly, but rapidly, as to remind the hearer of the note of the Dove. This bird constantly rubs himself in the sand with which the bottom of his large cage is supplied, dusting himself like the Larks, but takes great care to shake off any sand or gravel that may adhere to his food, which is raw meat, chopped and boiled egg. He hides superfluous food, and resorts to his hoard when hungry. When allowed to come out of his cage, he takes short flights about the room; but would not be considered a bird of great power on the wing; yet the Bishop of Norwich has recorded that "one approached a vessel in the middle of the Atlantic, and kept company with it a good way, but did not settle on board, which it probably would have done had it been tired."

At the moment of settling on the floor of the room, Mr. Bartlett's bird bends the head downward till the point of the beak touches the floor, after which, as well as occasionally at other times, the long feathers forming the crest are alternately elevated and depressed in a slow and graceful manner, the bird assuming an appearance of great vivacity, running on the ground with a very quick step. M. Necker, in his Memoir on the Birds of Geneva, says, Hoopoes fight desperately, and leave the ground covered with their feathers.

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* The note probably suggested the name, which, according to Turner, was an Howpe; Germanice, ein Houp. The French name, La Huppe, is particularly appropriate, from its double reference to the crest and the note.

A favourite locality for the Hoopoe on the Continent has thus been described by a correspondent in the Magazine of Natural History:—"On the Bordeaux side of the Garonne, and near the city, are large spaces of marshy ground, intersected by broad ditches and creeks terminating in the river; where from the advantage derived from the water, many poplars and willows are planted for the sake of the twigs, which are much used for tying vines. These trees being topped at about ten or twelve feet from the ground, so as to induce them to sprout much, become very thick, and, in the course of a few years, gradually decaying at the centre, are attacked by numerous insects, particularly the jet ant, *Formica fuliginosa.* In these retired places, which are frequented only by a few cowherds and country people, the Hoopoe, which is a very shy bird, may be frequently observed examining the rotten wood, and feeding on the insects with which it abounds. The Hoopoe flies low and seldom, unless when disturbed, its food being so abundant as to require little search. It breeds in a hollow willow about the end of May. The young come out in June; but I could not ascertain the exact time required for hatching."

Mr. Gould mentions that a specimen was shot by J. Lullivan, Esq. on the 28th of September, 1832, in his own pleasure-grounds at Broom House, Fulham, only four miles west from London. Further west it has been obtained in

Wiltshire and Hampshire. In Dorsetshire it has been frequently met with. One specimen has been shot by my friend William Thompson in his garden at Hamworthy, near Poole, in the latter part of September 1827. The injury this bird received from the gun was slight, and on being approached it drew back the head, erected its crest, and lowered its wings, making a show of great resistance, but ultimately allowed itself to be taken up without attempting to inflict any wound. This part of our coast appears to be one of the most favourite haunts of the Hoopoe in this country. In the collection of the Rev. Mr. Barclay at Swanage, which I had the pleasure of seeing in the autumn of 1827, were three Hoopoes, all killed in that vicinity. In Devonshire, the frequent occurrence of this bird has been recorded by Montagu and Dr. E. Moore. In his Cornish Fauna, Mr. Couch says, "So many specimens have been met with, as to justify me in saying that it is not uncommon in Corwall. The periods of their visit are about the vernal and autumnal equinox, as if performing a regular migration; and for several years I have noticed the occurrence of one or more specimens within a very limited distance of the same spot, an elevated and retired farm near the sea. Two were shot at one time, after they had seemed to have paired; and in the autumn of 1836 one remained near the farm-yard for about a week, being by no means shy. It seemed to be in moult, having but one or two feathers in the crest." It has also been shot lately at Scilly. It has been killed in south and north Wales, in Lancashire, and in Cumberland. Mr. Thompson of Belfast informs me this bird has occasionally been killed in different parts of Ireland.

South east, and north of London, it has been killed in Sussex, Surrey, Kent, Suffolk, Norfolk, Lincolnshire, and

Yorkshire. The bird figured by Mr. Bewick was killed at Bedlington on the coast of Durham; that used by Mr. Selby was caught near Bamborough Castle on the coast of Northumberland; Mr. Macgillivray, of Edinburgh, mentions one that was shot near Porto Bello; it has also been killed in Ayrshire, and at Banff.

Since the publication of the first edition of this work, examples of the Hoopoe are recorded to have been killed in Kent, Norfolk, Yorkshire, Staffordshire, Oxfordshire, Cornwall, and Glamorganshire.

This bird in summer goes as far north as Denmark, Sweden, and Russia. Southward thence on the European continent, it is found in Germany, is common in Holland, France, Spain, and occurs in small flocks at Gibraltar. Captain Brown was told by an officer of the 92nd Regiment that this bird is met with in great numbers near Ceuta, in Africa, opposite to Gibraltar, during the whole year, and the late G. W. H. Drummond Hay, Esq. sent the Zoological Society specimens from Tangiers, remarking that they were common, and generally seen about dunghills. Dr. Heiniken included the Hoopoe in his enumeration of the birds of Madeira; it probably inhabits the whole of the northern part of Africa, and is recorded as breeding in Egypt. It is common in Italy from May to September, is found in Corfu, Sicily, Malta, and Crete, was seen at Hushak by Mr. Strickland in April, and has been received lately by the Zoological Society from Trebizond.

B. Hodgson Esq. includes it in his Birds of Nepal, and Mr. Blyth has obtained specimens in the vicinity of Calcutta.

In the adult male the length of the beak, from the point to the angle of the gape, is two inches and one quarter;

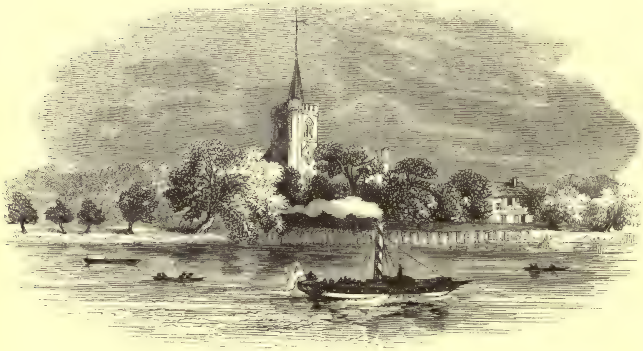
the distal two-thirds of its length nearly black; the base flesh colour, or pale reddish brown; the irides brown; from the forehead, over the top of the head to the occiput, are two parallel rows of elongated feathers, arranged with their surfaces outwards towards the side, forming a crest; the longest feathers, which are those about the middle, have the base of a rich buff colour; towards the end of the feather, a patch of white tipped with velvet black; the feathers of that part of the crest on the forehead are the shortest of the series, and are without the white patch; the sides of the head and back of the neck pale buff; across the back are three half-circular bands, inclining downwards, one band of white between two of black; the rump white; the upper tail-coverts white at the base, and black at the end; the tail-feathers are black, with a well-defined white patch about half way along in the middle feathers, but gradually nearer the end in those toward the outside of the tail, which gives to this band the form of a portion of a circle when the tail-feathers are spread: both sets of wing-coverts are black, with a transverse bar of buffy white; the feathers on the shoulder and carpal joint pale brown; the primaries jet black, with one broad bar of white; the secondaries and tertials also black, but with four or five narrow bars of white; some of the tertials have in addition edges and tips of pale buff, with an obliqe longitudinal stripe of pale buff on the inner web of the last tertial feather; when the wings are expanded, the white transverse bars on the jet black ground are very regular and very conspicuous; the chin, throat, breast, and belly, are pale buff; under tail-coverts white: legs and toes brown; the claws black, and but slightly curved.

The whole length twelve inches and a half. From the carpal joint to the end of the wing, five inches and five-eighths; the first wing-feather half the length of the second; the second rather longer than the eighth, and one quarter of an inch shorter than the seventh; the third and sixth feathers equal in length, but a little shorter than the fourth and fifth, which are also equal, and the longest in the wing.

The plumage of the female is rather paler in colour than that of the male, and the buff has much less of the rufous tinge; the white parts of the tertials are without any of the buff colour observable in the males.

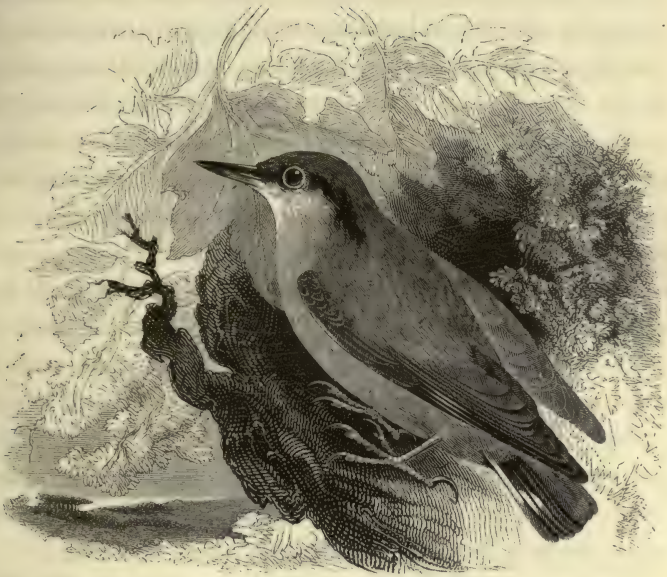
In young birds the feathers on the breast and flanks are crossed with narrow dusky lines.

The vignette is a view of Fulham church, with part of the Bishop's Walk, taken from Putney Terrace.



INSESSORES.
SCANSORES.

CERTHIADÆ.



THE NUTHATCH.

Sitta Europœa.

Sitta	*Europœa,*	*European*	*Nuthatch,*	Penn. Brit. Zool. vol. i. p. 336.
”	”	”	”	Montagu, Ornith Dict.
”	”	*The*	”	Bewick. Brit. Birds, vol. i. p. 146.
”	”	”	”	Flem. Brit. An. p. 81.
”	”	”	”	Selby, Brit. Ornith. vol. i. p. 385.
”	”	”	”	Jenyns, Brit. Vert. p. 154.
”	”	*Common*	”	Gould, Birds of Europe, pt. xii.
”	”	*Sitelle Torchepot,*		Temm. Man. d'Ornith. vol. i. p. 407.

Sitta. *Generic Characters.*—Beak straight, nearly cylindrical, wider than high at the base, subulate, pointed. Tongue short, pointed, horny. Nostrils basal, rounded, partly hidden by hair and short feathers. Feet with three toes before, and one behind; the outer toe joined at its base to the middle toe. Wings rather short; the first feather very short, the fourth or fifth feather the longest. Tail short, flexible, square at the end.

The well-known Nuthatch was considered till lately the only example of its genus in Europe ; but another species having been recently discovered, which is an inhabitant of Dalmatia and Stiria, has somewhat impaired the value of the old specific name. The Nuthatch, the last of our group of the true climbing birds, is an interesting species, and a great favourite with many observers ; it inhabits woods, plantations, and parks, particularly such as contain old oaks, and other large forest trees. It is resident here all the year, approaching orchards and gardens in winter ; but is not equally numerous in every district. This bird, by means of its powerful claws, for its tail-feathers are not calculated to afford it any support, is able to climb with a short quick step over the rough bark of trees, and apparently with equal ease in any direction ; our Woodpeckers are occasionally seen to hop when climbing, but the Nuthatch creeps or runs along so smoothly that its motions more resemble those of a mouse than those of a bird.

The names of Nuthatch and Nutjobber have been given to this bird from its habit of feeding on the kernels of nuts, which, however thick or hard the shells may happen to be, are broken with equal ease and dexterity. Sir Thomas Browne says that in his time this bird was called Nuthack. The nut, or filbert, sometimes brought from a distance, is placed in an angular crevice in the bark of a tree, and the bird having fixed it, moves round it as if to ascertain how best it can make an impression upon it by repeated blows with the point of its strong beak, aided by the whole weight of the body, which is frequently placed above the nut to give greater effect to the blow, and the noise made is considerable. Besides nuts, this bird feeds on caterpillars, insects, berries, hard seeds, and beech-nuts or mast : Bewick mentions that it is also fond of picking bones. Old beech trees, from the deep longitudinal fissures in the bark, are the favourite resort of the Nuthatch, as affording both food and the means of enabling them to get at it. In the spring of the present year, when examining some fine old beech trees, upon one of which a pair of the Nuthatch had been for some time observed to be very busy, a considerable number of the beech nuts were found fixed in the angles of various fissures in the bark, several shells and husks were lying at the base of the tree, and there was little doubt these trees were among those which this pair of birds visited daily.

The call of the Nuthatch is a shrill single note, frequently repeated; and, like the other true climbers, it builds in holes of trees: if the external aperture is large, the Nuthatch plasters up part of it with mud, and if the plastering is removed, the bird almost invariably renews it the first or second day. In reference to this habit of working with plaster, one of the names applied to this bird in France is *Pic-maçon*. Bird-nesting boys, when they find a hole that has been recently plastered, always examine it, as they know by experience that it is almost certain to be tenanted.

The Nuthatch makes a slight nest, or rather a collection of dead leaves, moss, bits of bark and wood, and lays from five to seven eggs; these are nine lines in length and seven lines in breadth, white, with some pale red spots; the eggs are very much like those of the Great Tit; but the spots are generally less numerous and rather larger.

The actions of these birds are very amusing, and it is not difficult to induce them to pay constant visits to a garden. It is only necessary to fix a few nuts in the bark of any tree that is conveniently situated for observation from a window, and the Nuthatch will soon find them;

and fresh nuts being deposited will insure almost daily visits. A kernel of a nut fastened to the bark of a tree with a pin is a great temptation. If old birds are caught and caged, though they will feed readily on almost anything that is given them, they soon kill themselves by their unceasing exertions to escape; but the young birds are easily reared: and Sir William Jardine relates that "he had lately an opportunity of observing a nest of our native species which had been taken young. They became remarkably tame; and when released from their cage, would run over their owner in all directions, up or down his body and limbs, poking their bills into seams or holes, as if in search of food upon some old and rent tree, and uttering during the time, a low and plaintive cry. When running up or down, they rest upon the back part of the whole tarsus, and make great use as a support of what may be called the real heel, and never use the tail. When roosting, they sleep with the head and back downwards, in the manner of several Titmice." The Nuthatch has frequent and obstinate battles with some species of the Tits, for the possession of a favourite locality for nesting, and this may be a reason for plastering up a considerable portion of a large external aperture, as the smallest breach is the most easily defended.

Some observations on the Nuthatch by the Rev. J. C. Atkinson, are thus recorded in the 1st volume of the Zoologist. A pair were induced to visit a particular tree by fixing nuts in the bark for them; "the birds attended regularly; they were there the first thing in the morning, and apparently the last thing before going to roost. Seeing that the nuts were carried away whole, I began to crack them, and fix the kernel only in the crevices, or by means of pins, to the tree. The greater part of the nuts were now eaten on the spot; occasionally, when a large piece was got, the birds flew away with it to some tall trees close by, but very soon returned for more. Their absence on these occasions was very short, certainly not long enough to lead me to suppose they had time to eat the nut; I concluded it was either added to a store already existing, or deposited on the tall trees. Fragments of nuts were sometimes driven from four to six feet from the tree by the violence of the blows applied; they were almost invariably caught by the bird before they reached the ground, and, without one single exception, in the bill. The feet were never used for that purpose. Latterly these birds became so tame as to sit within two feet or so of my head, while I was preparing their feast; and if I threw a nut into the air to them, they would fly after and catch it. They took dozens in this way."

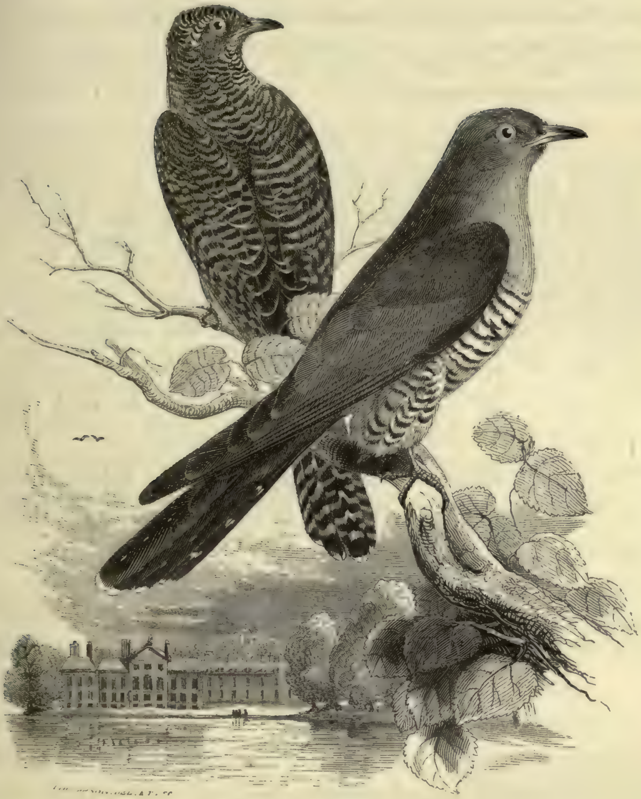
The Nuthatch is found in most of the wooded parts of England. Near London it may be frequently seen in Kensington Gardens; and I may here observe that I am indebted to Mr. Henry Churton, of Oxford Street, for most of the notes I have used referring to Kensington Gardens as a locality. From London westward this bird, though not observed in Cornwall by Montagu, is found as far as Liskeard, and the wooded eastern parts of that country, according to Mr. Couch and Mr. Rodd; but is rare in the extreme western part. Mr. Eyton includes the Nuthatch in his Catalogue of the Birds of Shropshire and North Wales; but it does not appear to have been taken in Ireland. In the midland counties of England it is well known, and on the east coast is found in Suffolk, Norfolk, Lincolnshire, and occasionally in Yorkshire. Mr. Selby has traced it as far north as the banks of the Wear and the Tyne. The authority for considering the Nuthatch as a bird of Scotland has been questioned, and no recent capture has been recorded that I am aware of. Müller includes it as a bird of Denmark, and M. Nilsson says it is not uncommon in some parts of Sweden. In the centre, and in the south of Europe, it is common and resident, particularly in France, Provence, Italy, and Sicily.

The beak is about as long as the head, thick, and strong, rather depressed, and wider than high at the base; the ridge of the upper mandible rounded, the colour bluish black; the base of the under mandible pale brownish white; irides hazel; from the base of the beak, through the eye, to the shoulder, a black streak; top of the head, neck, back, wing-coverts, tertials, upper tail-coverts, and the two middle tail-feathers, uniform light slate grey, the primary quill-feathers darker; all the tail-feathers, except the two middle ones, black at the base, grey at the end, with a patch of white between these two colours on the three outside feathers at each side; the chin white; throat, breast, and belly, buff colour; flanks, and under tail-coverts, chestnut, the latter tipped with white; legs, toes, and claws, light brown; the hind toe and claw longer, and much stronger than the middle toe.

The whole length of the male described rather less than six inches. From the carpal joint to the end of the wing three inches and one quarter; the first feather very short; the second rather longer than the seventh, but shorter than the sixth; the third, fourth, and fifth nearly equal in length, but the fifth rather the longest in the wing.

INSESSORES.
SCANSORES.

CUCULIDÆ.



THE COMMON CUCKOO.

Cuculus canorus.

Cuculus	*canorus,*	*Common*	*Cuckoo,*	PENN. Brit. Zool. vol. i. p. 305.
„	„	„	„	MONTAGU, Ornith. Dict.
„	„	*The*	„	BEWICK, Brit. Birds, vol. i. p. 129.
„	„	*Common*	„	FLEM. Brit. An. p. 90.
„	„	„	„	SELBY, Brit. Ornith. vol. i. p. 397.
„	„	„	„	JENYNS, Brit. Vert. p. 154.
„	„	„	„	GOULD, Birds of Europe, pt. xix.
„	„	*Coucou gris,*		TEMM. Man. d'Ornith. vol. i. p. 381.

CUCULUS. *Generic Characters.*—Beak of moderate length, shorter than the head, slightly curved, the upper mandible with a small but almost obsolete notch near the tip; the gape wide; the under mandible following the curve of the upper. Nostrils basal, circular, pierced in the centre of a naked membrane. Wings rather long and pointed, the third quill-feather the longest. Tail long and graduated. Tarsi stout, partly feathered; toes two in front, two behind; the outer toe on each side reversible.

THE Natural History of the Cuckoo has always been a subject of great interest to the Ornithologist; and although its habits are now pretty well ascertained, the question why this bird, of all our numerous summer visiters, many of them coming from the same country, and existing on similar food, should deposit its eggs in the nests of other birds, and be apparently regardless of its offspring, has not yet received a satisfactory answer, yet it may be said that considerable advances have been made towards it.

The male Cuckoo makes his appearance in this country about the middle of April; and in reference to the periods which mark the various stages of his progress through the season, I have somewhere met with the following couplets,—

In April,
Come he will.
In May,
He sings all day.
In June,
He alters his tune.
In July,
He prepares to fly.
Come August,
Go he must.

The well-known notes of the male are listened to with pleasure as the record of returning spring, with its bright skies and gratifying associations; the voice of the female is different, and has been compared to that of the Dabchick and the Gallinules. Unlike most other birds, Cuckoos do not pair; but a female is occasionally seen on the wing, and is frequently attended by one or more males. The earliest eggs do not appear to be laid till the middle of May, and Montagu found an egg as late as the 26th of June. Mr. Jesse mentions that a young Cuckoo which had just escaped from a Wagtail's nest was taken in Hampton Court Park on the 18th of August, 1832. The egg which produced this young bird, was probably laid during the second week in July; and from the middle of May to the middle of July is included, probably, the whole time during which the female Cuckoo produces eggs. These eggs, as it is well known, are exceedingly small compared to the size of the bird. The largest Cuckoo's egg obtained by Dr. Jenner, weighed but fifty-five grains, the smallest only forty-three grains. Of four specimens in my own collection the largest only measures eleven lines and a half in length, and eight lines and a half in breadth. This is the exact size of the egg of the Skylark, yet the comparative size of the two birds is as four to one. The egg of the Cuckoo, according to Mr. Selby, requires fourteen days incubation, and the young are able to leave the nest in three weeks, but require feeding afterwards.

The egg of the Cuckoo, which is of a pale reddish grey colour, has been found in the nests of the Hedge Accentor, the Robin, the Redstart, Whitethroat, Willow Warbler, Pied Wagtail, Meadow Pipit, Rock Pipit, Sky Lark, Yellow Bunting, Chaffinch, Greenfinch, Linnet, and Blackbird, in this country; and on the European continent, M. Temminck says, it has also been found in the nests of the Thrush and the Red-backed Shrike. From the circumstance of a pair of Red-backed Shrikes having been seen feeding a young Cuckoo, as recorded by Messrs. Sheppard and Whitear in their Catalogue of the Birds of Norfolk and Suffolk, it is probable that the Cuckoo sometimes deposits its egg in the nest of the Red-backed Shrike in this country; but the nests in which the Cuckoo's eggs are most frequently found, are those of the Hedge Warbler, the Pied Wagtail, and the Meadow Pipit; these nests being rather numerous, and not very difficult to find. Two eggs of the Cuckoo have been occasionally found in one nest; but it is the prevailing opinion that the second egg is deposited by a second Cuckoo, and that one Cuckoo does not go a second time to the same nest to lay an egg. Mr. Hoy, Mr. Salmon, and other good observers, bear testimony to the fact of the adult Cuckoo occasionally destroying one or more of the eggs of the nest in which she deposits her own. But the young Cuckoo when hatched is almost always found alone in the nest, without any eggs or young birds, whatever may happen to be the nest in which it has been hatched, the foster parent birds also attending to its wants with the greatest assiduity; and in order to ascertain the cause of this apparent preference to the exclusion of their own offspring, Dr. Jenner, at the request of John Hunter, made a series of observations and experiments to illustrate the natural history of the Cuckoo the details of which were published in the Transactions of the Royal Society for the year 1788. The results of Dr. Jenner's observations may be briefly stated as follows:—

The small birds in the nests of which the Cuckoo's egg is most frequently found, take four or five days in laying their eggs. During this time,—generally after one or two eggs have been laid,—the Cuckoo contrives to deposit her egg, leaving the future care of it to the owner of the nest. When the bird has sat her usual time, and disengaged the young Cuckoo and some of her own offspring from the shell, the young Cuckoo being commonly hatched first, her own young ones, and any of her eggs that remain unhatched, are soon turned out, the young Cuckoo remaining possessor of the nest, and the sole object of her care. The young birds are not previously killed, nor are the eggs demolished, but all are left to perish together, either entangled about the bush which contains the nest, or lying on the ground under it. The expulsion is effected by the young Cuckoo, who is generally strong enough the day after it is hatched to insinuate itself under the remaining eggs or young birds, and one after another, to hoist them out; thus securing to itself the whole of the food brought by the old birds, who adopt and provide for the young Cuckoo as if unable to distinguish between it and their own young, since if any remain, which is sometimes the case, all are fed alike. I have mentioned that two eggs of the Cuckoo are sometimes found in one nest; the following paragraph, referring to such an occurrence, is from Dr. Jenner's paper:—"June 27th, 1787. Two Cuckoos and a Hedge-sparrow were hatched in the same nest this morning; one Hedge-sparrow's egg remained unhatched. In a few hours after, a contest began between the Cuckoos for the possession of the nest, which continued undetermined till the next afternoon; when one of them, which was somewhat superior in size, turned out the other, together with the young Hedge-sparrow, and the unhatched egg. This contest was very remarkable. The combatants alternately appeared to have the advantage, as each carried the other several times nearly to the top of the nest, and then sunk down again, oppressed by the weight of its burthen; till at length, after various efforts, the strongest prevailed, and was afterwards brought up by the Hedge-sparrows."

"It is wonderful," says Dr. Jenner, "to see the extraordinary exertions of the young Cuckoo, when it is two or three days old, if a bird be put into the nest with it that is too weighty for it to lift out. In this state it seems ever restless and uneasy. But this disposition for turning out its companions begins to decline from the time it is two or three till it is about twelve days old, when, as far as I have hitherto seen, it ceases. Indeed, the disposition for throwing out the eggs appears to cease a few days sooner; for I have frequently seen the young Cuckoo, after it had been hatched nine or ten days, remove a nestling that had been placed in the nest with it, when it suffered an egg, put there at the same time, to remain unmolested. The singularity of its shape is well adapted to these purposes; for, different from other newly hatched birds, its back from the shoulders downwards is very broad, with a considerable depression in the middle. This depression seems formed by nature for the design of giving a more secure lodgement to an egg, or a young bird, when the young Cuckoo is employed in removing either of them from the nest. When it is about twelve days old, this cavity is quite filled up, and then the back assumes the shape of nestling birds in general." The substances found in the stomach of young Cuckoos are various, depending upon the species of bird by which they are fed. They consist of flies, beetles, caterpillars, grasshoppers, and small snails. When fed by any of the Finches, which are rather vegetable feeders, they are supplied with young wheat, small vetches, tender shoots of grass, and seeds. Adult Cuckoos seem most partial to hairy caterpillars. The young are frequently found in a nest in a hedge-row by their almost incessant querulous note, which appears to be a call for food; and they are voracious feeders. The young are sometimes, by great care, kept alive in confinement over their first winter, but seldom survive long afterwards. The best food for them is raw beef chopped small, and mixed with yelk of egg.

"To what cause then," says Dr. Jenner, "may we attribute the singularities of the Cuckoo? may they not be owing to the following circumstances? The short residence this bird is allowed to make in the country where it is destined to propagate its species, and the call that nature has upon it, during that short residence, to produce a numerous progeny. The Cuckoo's first appearance here is about the middle of April, commonly on the 17th. Its egg is not ready for incubation till some weeks after its arrival, seldom before the middle of May. A fortnight is taken up by the sitting bird in hatching the egg. The young bird generally continues three weeks in the nest before it flies, and the foster-parents feed it more than five weeks after this period; so that if a Cuckoo should be ready with an egg much sooner than the time pointed out, not a single nestling, even one of the earliest, would be fit to provide for itself before its parent would be instinctively directed to seek a new residence, and be thus compelled to abandon its young one; for old Cuckoos take their final leave of this country the first week in July." This, however, I may here remark, is not always the case. The notes of the male have been heard as late as the end of July. The males arrive before the females in spring, and probably leave us before them in summer. The young birds of the year do not go till September; and Mr. Rodd of Penzance sends me word that he has known them remain in Cornwall till October.

M. Temminck, in the Supplement to the first volume of his Manual, mentions that M. Schlegel, one of the Assistant Naturalists in the Museum at Leyden, had in a memoir addressed to the Natural History Society of Harlem, supplied details of great interest on the probable causes which induce the Common Cuckoo, and all other species which deposit their eggs in the nests of small insectivorous birds, not to burthen themselves with the hatching or the feeding of their young. "The principal cause alleged in the case of the Cuckoo, is the particular nature and effect of its food producing an enlargement of the stomach, which appears to influence the development of the eggs in the ovarium; these are known to be very small, and the bird lays at intervals of six or eight days."

Whatever influence may really be attributable to the nature or quantity of the food taken by the Cuckoo, there is good reason to believe that it does produce its eggs at intervals of several days, and this is now known to be the case in the Yellow-billed Cuckoo of America, which does bring up its own young. Four examples of this bird having been shot in this country, it is entitled to a place in this work, and its history will follow in detail; it may be sufficient here briefly to state that the nests of the Yellow-billed Cuckoo, when examined, contained no two eggs or young birds of the same age; but all exhibited an obvious difference of several days between their various stages of advancement.

I have constantly observed, when examining the anatomical structure of our Cuckoo, the small comparative size of the parts destined to effect the reproduction of the species. On this subject I furnished a note to Mr. James Jennings, which was published in his Ornithologia in 1828. Dr. Jenner, in his paper on the migration of birds, says that he had never found the internal sexual organs of the male Cuckoo so large as those of the Wren, yet the two birds compared in size are as six to one. Mr. Thompson of Belfast, who dissected a female Cuckoo on the 28th of

May 1833, says it did not contain any eggs so large as ordinary-sized peas. May not the small size of these organs, and the probable low degree of excitement, also diminish the interest attached to the providing for the wants of the young? but that this feeling is not wholly obliterated in every instance is the opinion of Mr. J. E. Gray of the British Museum; who, from observations made by himself, states that the Cuckoo does not uniformly desert her offspring to the extent that has been supposed; but, on the contrary, that she continues in the precincts where the eggs are deposited, and in all probability sometimes takes the young under her protection when they are sufficiently fledged to leave the nest.

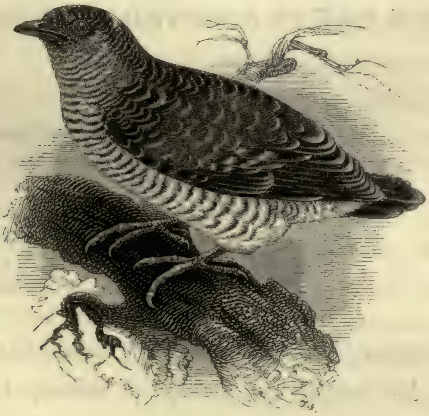
The Cuckoo is commonly distributed every summer over England, Ireland, and Scotland; it also visits Orkney. It is found in Denmark and Sweden, and over Scandinavia generally. Mr. Barrow, when in the northern part of Norway, heard the Cuckoo near Röraas, at an elevation of three thousand feet above the level of the sea; and Linnæus, in the account of his Tour in Lapland, mentions having heard the Cuckoo there as early as the 13th of May, and as late as the 10th of July. This bird is found in Siberia, and over great part of Asia. The Zoological Society have received specimens from the Himalaya Mountains, which are precisely similar to our British bird, and quite distinct from the *Cuculus micropterus* of Mr. John Gould from the same locality, which, though very like our bird in size and colour, is at once distinguished from it by its larger beak, shorter wings,—whence its name,—and its smaller feet. A collection of birds, formed by Major James Franklin, F.R.S. on the banks of the Ganges, and in the mountain chain of Upper Hindoostan, exhibited at the Zoological Society in August 1831, includes specimens of which it is stated in the Proceedings of the Society for that year, page 121, "This bird, on comparison with the Common Cuckoo, differs so little that it can scarcely be called a variety; it is the Common Cuckoo of India, and its habits and note resemble those of the European bird." Colonel Sykes also includes it in his Catalogue of the Birds of the Dukhun, but says it is rare. M. Temminck says it is found in Japan; Dr. Horsfield includes it in his Catalogue of the Birds of Java; and Pennant, in his Arctic Zoology, says it goes as far east as Kamptschatka. This bird, as might be expected, visits the whole of the European continent, remaining in Italy from April to September; it visits Sicily, the Morea and the Grecian Archipelago, in its way from and to Africa with the Turtle-dove, and is called by a name that signifies Turtle Leader. Mr. Strickland saw the Cuckoo at Smyrna in April, and the Zoological Society have received specimens, sent by Messrs. Dickson and Ross, from Erzerum. According to M. Temminck, the Cuckoo is found in Egypt, and examples received from South Africa, though differing slightly, were considered by Le Vaillant and M. Temminck to be of the same species.

The adult male Cuckoo has the beak bluish black, except at the base, where it is pale brown; the irides yellow; the head, neck, back, and upper tail-coverts bluish grey; quill-feathers rather darker, and the broad inner webs barred with white; tail long and graduated, the middle pair of feathers being the longest, and the outside feathers the shortest; the colour greyish black, tipped with white, and a few white spots on the centre and sides. Chin, neck, and upper part of the breast, ash-grey; lower part of breast, belly, and under wing-coverts, white, barred transversely with lead grey; vent, and under tail-coverts, also white, but the dark bars are less numerous; legs and toes gamboge yellow.

The whole length about fourteen inches; from the carpal joint to the end of the wing eight inches and three-quarters; the first quill-feather near three inches shorter than the second, which is equal to the fourth, the third feather the longest in the wing.

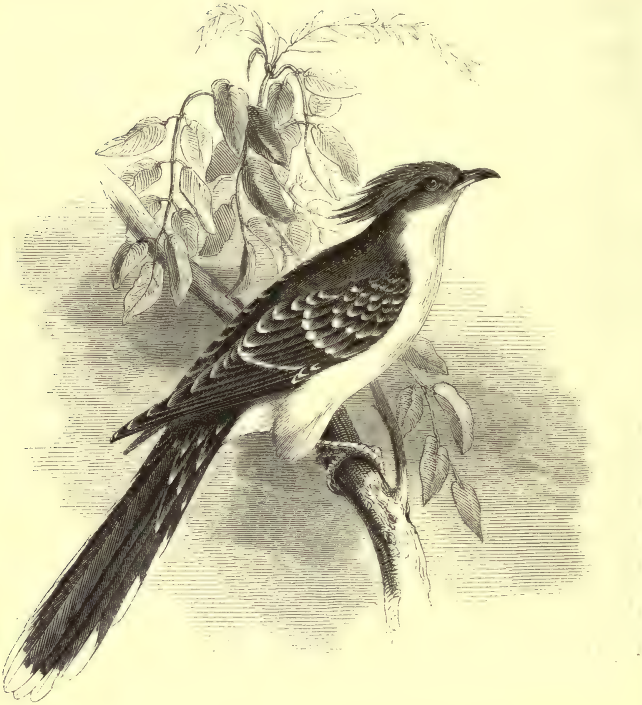
The female is smaller than the male, and on her first return to this country has the neck barred with brown, and the wings and back tinged with brown; adult females differ but little from adult males.

Young birds of the year, when they have attained the length of twelve inches, have the irides brown; whole of the upper surface of head and body barred alternately with brownish red and clove brown; quill and tail-feathers reddish brown, the former barred with white, the latter spotted with white in the line of the shaft of the feather: neck, breast, and under parts, dull white, closely barred with dark brown. Young birds about to leave the nest are represented in the vignette below.



INSESSORES.
SCANSORES.

CUCULIDÆ.



THE GREAT SPOTTED CUCKOO.

Cuculus glandarius.

	The Great Spotted Cuckow,	Edwards, Glean. pl. 57.
Cuculus glandarius,	„ „ *Cuckoo,*	Latham's Syn. v. 2. p. 513.
	Pisan „	„ „ v. ii. p. 520.
„ „	„ *Spotted* „	Gould, Birds of Europe, pt. xiii.
„ „	*Coucou Geai ou tacheté,*	Temm. Man. d'Ornith. vol. iii. p. 274.
„ „	„ „ „	„ Pl. Color. 414.

"The *Cuculus glandarius*, or Great Spotted Cuckoo, was taken near Clifden in the county of Galway last winter.

I have seen the specimen, which is the property of Mr. Creighton of Clifden. As it is the first noticed occurrence of this bird in the British Islands, you will oblige me by making it known through the medium of the Annals of Natural History; yours very truly, R. Ball." Such is the notice of the occurrence of this bird published in the summer of 1843, and Mr. Ball has lately been kind enough to ascertain and send me the particulars which follow. The Cuckoo was taken by two persons walking on the island of Omagh, where, pursued by Hawks, it flew for refuge into a hole in a stone fence, or wall, was taken alive and lived for four days (attempt being made to feed it on potatoes.) The inhabitants had never seen any bird like it before. It was taken about Christmas, 1843. The bird when chased by the Hawks appeared fatigued, weak, and emaciated, as if after a long flight, such as Woodcocks on their first arrival. The specimen has been presented to Trinity College, Dublin, and is now in the Museum.

This species inhabits Senegal and North Africa. Our countryman Edwards, in his notice of the subject of his 57th Plate, says, "I suppose this bird to be an alternate inhabitant of the southern parts of Europe, and the northern parts of Africa; since it was shot on its supposed passage, on the rock of Gibraltar, in Spain, by an English officer there, who sent it to his brother, Mr. Mark Catesby, of London, who obliged me with it, to make what use I thought proper."

M. Malherbe, when noticing this species in his Ornithological Fauna of Sicily, says, he has frequently received it from Spain, and Brisson calls it *Cuculus Andalusiæ.* It is included among the birds of Provence by Polydore Roux; M. Vieillot includes it also in his Fauna Française, and mentions that in different years many examples have been taken in Languedoc. M. Brehm, Meyer, and Nauman, notice its occasional appearance in Germany.

One name used by Dr. Latham for this species, as quoted at the head of this subject, is the Pisan Cuckoo, in reference to which it is stated " that a male and female of this bird were found near Pisa, in Italy, where they made their nest, laying four eggs, sat on, and hatched them. It was observed that this species had never made its appearance there before; nor was it known from whence these birds came." M. Savi includes it in his Birds of Italy, and it is found in Sicily, Egypt, and Syria.

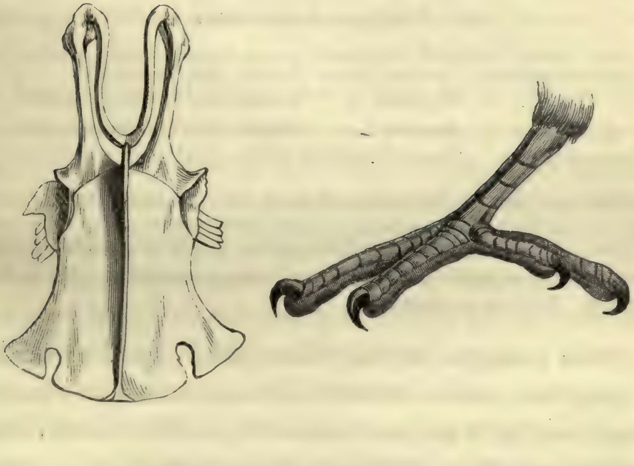
Mr. Gould in his well known work on the Birds of Europe, says, that the true habitat of this species is the wooded districts skirting the sultry plains of North Africa, but those that pass the Mediterranean find a congenial climate in Spain and Italy. Opportunities are still wanting to confirm the most interesting of its habits.

The adult male bird has the beak bluish black; the irides yellow; the head and cheeks dark ash colour, the feathers on the top and back of the head considerably elongated, forming a conspicuous crest; the back, scapulars, wing-coverts, rump, and upper tail-coverts greyish black, most of the wing-feathers, wing and tail-coverts, with more or less white at the end; the tail-feathers graduated, the two in the centre brown, the outer feathers darker, but all are tipped with white; throat and chest reddish white; abdomen, under wing and under tail-coverts pure white; legs, toes, and claws, bluish black.

The whole length of a specimen in the Museum of the Zoological Society, is fifteen and a half inches, of which the middle tail-feathers alone measure eight inches; the outer tail-feather but four inches and three-quarters; wing from the anterior bend eight inches; the fourth primary the longest in the wing.

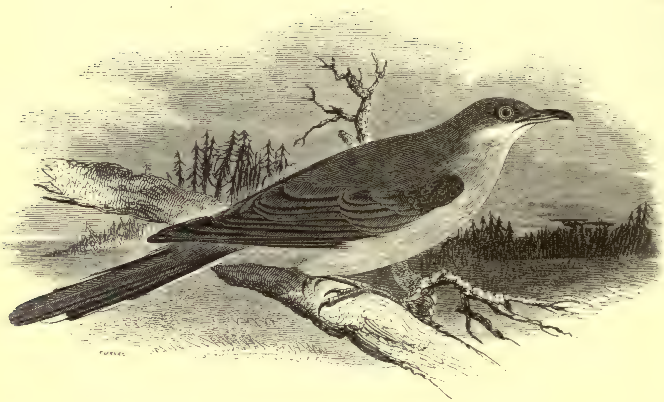
Considerable differences are observed in the plumage of this species, depending upon age. Mr. Gould says the plumage of middle age differs from that of the adult in having the head and crest of a much darker colour, and the whole of the upper surface more inclining to reddish brown with slight reflections of green; the primaries are rufous, tinged with greenish brown towards the points, which are pure white; the throat and chest are light reddish brown; the under surface as in the adult male.

The vignette below is a representation of the breast-bone and the foot of our Common Cuckoo.



INSESSORES.
SCANSORES.

CUCULIDÆ.



THE YELLOW-BILLED AMERICAN CUCKOO.

Coccyzus Americanus.

Coccyzus Americanus,		*Carolina Cuckoo,*	JENYNS, Brit. Vert. p. 155.
"	"	*Virginian* "	EYTON, Rare Brit. Birds, p. 23.
"	"	*American* "	GOULD, Birds of Europe, pt. xxii.
Cuculus cinerosus,		*Coucou Cendrillard,*	TEMM. Suppl. Man. d'Ornith. p. 277.

COCCYZUS. *Generic Characters.*—Beak of moderate length, rather slender, thickened at the base, somewhat curved, compressed, pointed; ridge of the upper mandible rounded. Nostrils basal, the aperture pierced in a membrane. Legs with the tarsi and middle toe of equal length, outer toe reversible. Wings short, concave. Tail long, graduated.

FOUR examples of this Yellow-billed American Cuckoo having been taken in Great Britain,—namely two in Ireland, one in Wales, and one in Cornwall; and M. Temminck, as well as Mr. Gould, having admitted the species among their Birds of Europe, it is considered to be entitled to a place in this work.

The first notice which appeared of the occurrence of this bird was published in the Field Naturalists' Magazine in January 1833. Mr. Ball, of Dublin Castle, in a letter to the editor, made known the capture of the first specimen, which was shot near Youghal, in the county of Cork, in the autumn of 1825. When brought to Mr. Ball by the butler of a gentleman in the neighbourhood, who had shot it but a few minutes before, it was still warm and bleeding. The second was shot at a later period at Old Connaught, near Bray. The Cornwall specimen was the subject of a private communication, and the fourth was shot on the estate of Lord Cawdor in Wales during the autumn of 1832. This last example has now, by the liberality of his lordship, been deposited in the national collection at the British Museum, and one, if not both, of the specimens killed in Ireland, were exhibited at the Zoological Society by Mr. Thompson of Belfast in June 1835.

This bird, says Mr. Audubon, in the first volume of his American Ornithological Biography, " I have met with in all the low grounds and damp places in Massachusets, along the line of Upper Canada, pretty high on the Mississippi and Arkansas, and in every state between these boundary lines. Its appearance in the state of New York seldom takes place before the beginning of May, and at Green Bay not until the middle of that month." The most frequent note of this bird sounds so much like the word "cow," frequently repeated, that it has obtained the general appellation of Cow-bird; and from being particularly vociferous before rain, it is in some states called the Rain-crow. Unlike our English Cuckoo, this American species builds a nest and rears its young with great assiduity; but it sometimes robs smaller birds of their eggs, and its own egg, which is not easily mistaken from its particular colour, is occasionally found in another bird's nest. Mr. Audubon says, " That its own nest is simple, flat, composed of a few dry sticks and grass, formed much like that of the common Dove ; the eggs are four or five in number, of a uniform spotless greenish blue colour," one inch two lines in length by eight lines in breadth.

Wilson says that, " while the female is sitting, the male is generally not far distant, and gives the alarm, by his notes, when any person is approaching. The female sits so close that you may almost reach her with your hand, and then precipitates herself to the ground, feigning lameness, to draw you away from the spot, fluttering, trailing her wings, and tumbling over, in the manner of the Partridge, Woodcock, and many other species. Both parents unite in providing food for the young. This consists, for the most part, of caterpillars, particularly such as infest apple trees. The same sort of insects constitute the chief part of their own sustenance. They are accused, and with some justice, of sucking the eggs of other birds, like the Crow, the Blue Jay, and other pillagers. They also occasionally eat various kinds of berries. But from the circumstance of destroying such numbers of very noxious larvæ, they prove themselves the friends of the farmer, and are highly deserving of his protection."

As every newly ascertained fact in the reproduction of the species among the Cuckoos is a matter of interest, I here append some recent additions by Mr. Audubon, inserted in his fifth volume.

" Whilst at Charlestown in South Carolina, in the early part of June 1837, I was invited by J. S. Rhett, Esq. residing in the suburbs of that city, to visit his grounds for the purpose of viewing the nest of the Yellow-billed Cuckoo. This I did in company with my friend Dr. S.

Wilson, and we found ourselves highly gratified, as we were enabled to make the following observations :—

"A nest, which was placed near the centre of a tree of moderate size, was reached by a son of the gentleman on whose ground we were. One of the old birds, which was sitting upon it, left its situation only when within a few inches of the climber's hand, and silently glided off to another tree close by. Two young Cuckoos, nearly able to fly, scrambled off from their tenement among the branches of the tree, and were caught by us after a while. The nest was taken, and carefully handed to me. It still contained three young Cuckoos, all of different sizes, the smallest apparently just hatched, the next in size probably several days old, while the largest, covered with pen feathers, would have been able to leave the nest in about a week. There were also in the nest two eggs, one containing a chick, the other fresh or lately laid. The two young birds which escaped from the nest, clung so firmly to the branches by their feet, that our attempts to dislodge them were of no avail, and we were obliged to reach them with the hand. On now looking at all these young birds, our surprise was indeed great, as no two of them were of the same size, which clearly showed that they had been hatched at different periods, and I should suppose the largest to have been fully three weeks older than any of the rest. Mr. Rhett assured us that he had observed the same in another nest placed in a tree within a few paces of his house, and which he also showed to us. He stated that eleven young Cuckoos had been successively hatched and reared in it, by the same pair of old birds, in one season, and that young birds and eggs were to be seen in it at the same time for many weeks in succession.

"On thinking since of this strange fact, I have felt most anxious to discover how many eggs the Cuckoo of Europe drops in one season. If it, as I suspect, produces, as our bird does, not less than eight or ten, or what may be called the amount of two broods in a season, this circumstance would connect the two species in a still more intimate manner than theoretical writers have supposed them to be allied. Having mentioned these circumstances to my friend, Dr. T. M. Brewer, and requested him to pay particular attention to these birds while breeding, he has sent me the following note:—"The fact you intimated to me last July I have myself observed. The female evidently commences incubation immediately after laying her first egg. Thus I have found in the nest of both species of our Cuckoos* one egg quite fresh, while in another the chick will be just bursting the shell; and again, I have found an egg just about to be hatched while others are already so, and some of the young even about to fly. These species are not uncommon in Massachusets, where both breed, and both are much more numerous some years than others." Mr. Audubon adds, "I found the Yellow-billed Cuckoo plentiful and breeding in the Texas; and it is met with, on the other hand, in Nova Scotia, and even in Labrador, where I saw a few. It has been observed on the Columbia river by Dr. Townsend. No mention is made of it in the Fauna Boreali-Americana. Many spend the winter in the most southern portions of the Floridas." Pennant, in his Arctic Zoology, says of this bird, "It arrives in New York in May, makes its nest in June, and retires from North America in autumn."

The appearance of four examples of an American species in this country has caused some speculation. As far as I have been able to ascertain, these birds were obtained late in the month of August or early in the month of September. M. Temminck, unwilling to consider them as migrations from North America to Europe, thinks it probable the bird may yet be found in the North of Europe.

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* The other is the Black-billed American Cuckoo.

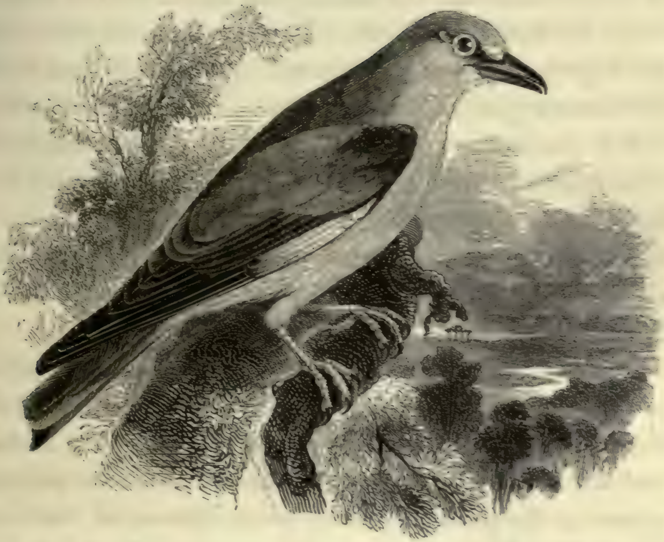
Mr. Thompson's observations on the occurrence of these four examples are thus recorded in the ninth volume of the Annals of Natural History, "The specimen obtained near Bray was shown to me by Mr. Glennon, bird preserver, Dublin, and I agree with Mr. Ball in considering it identical in species with his own. This was, with that gentleman's usual liberality, entrusted to me when about to visit London in the spring of 1835, when I compared it with the specimen presented by Lord Cawdor to the British Museum, and found them to be of the same species. Before leaving home, I had purchased in Belfast a Yellow-billed American Cuckoo from a person who had shot it at Long Island (United States) and at a meeting of the Zoological Society, exhibited this bird and Mr. Ball's for the purpose of showing their Specific identity. It was considered desirable to look as critically as possible to these birds, on account of the singular fact of their appearance in this hemisphere. Ornithologists can hardly believe that they cross the Atlantic. Temminck conjectures that this Cuckoo must breed in the north of Europe, whence individuals migrated to the British Islands. But our knowledge of their occurrence here only, and in the more western parts, (Ireland, Wales and Cornwall) in addition to the fact, that at the very period of their being met with, the species is, as we learn from Wilson and Audubon, in course of migration in the western hemisphere, seems to me presumptive evidence of their having really crossed the ocean. So far north as Labrador, Audubon has seen this bird in summer."

The beak is as long as the head; both mandibles slightly curved, the upper one brownish black inclining to yellow at the base; the under mandible yellow, except at the extreme point, which is nearly black; the irides hazel; the top of the head, back of the neck, the back, the wing-coverts, quill-feathers, and the two central tail-feathers, yellowish brown; the inner webs of the primary quill-feathers chestnut; the tail-feather on each side of the central pair black; the others black, broadly tipped with white; the outer feather white on the external web; the tail graduated; chin, throat, neck in front, breast, belly, and under tail-coverts, greyish white; the flanks and thighs pale brown; legs, toes, and claws, greyish lead colour.

The whole length of the bird about twelve inches. From the carpal joint to the end of the wing, five inches and five-eighths; the first quill-feather more than an inch shorter than the second; the second shorter than the third or fourth, but equal to the fifth; the third feather longer than the fourth, and the longest in the wing.

The Yellow-billed Cuckoo is an elegantly formed bird. The figure and description here given were taken from the specimen killed in Wales.

The female differs very little from the male in colour.



THE ROLLER.

Coracias garrula.

Coracias	*garrula,*	*Garrulous*	*Roller,*	Penn. Brit. Zool. vol. i. p. 300.
”	”	”	”	Montagu, Ornith. Dict.
”	”	*The*	”	Bewick, Brit. Birds, vol. i. p. 106.
”	”	”	”	Flem. Brit. An. p. 88.
”	”	*Garrulous*	”	Selby, Brit. Ornith. vol. i. p. 117.
”	”	”	”	Jenyns, Brit. Vert. p. 156.
”	”	*The*	”	Gould, Birds of Europe, pt. v.
”	”	*Rollier vulgaire,*		Temm. Man. d'Ornith. vol. i. p. 127.

Coracias. *Generic Characters.*—Beak of moderate size, compressed, straight, with cutting edges, upper mandible curved downwards at the point; gape wide; the sides bristled. Nostrils basal, lateral, linear, pierced obliquely, partly hid by a membrane furnished with feathers. Legs with the tarsus shorter than the middle toe; three toes in front, and one behind. Wings long; the first quill-feather a little shorter than the second, which is the longest in the wing.

The fifth and last division of the Insessores, or Perching Birds, is that of the Fissirostres, which, with slender or small feet, have also considerable width of gape, and feed more or less upon the wing. The British species included in this division are the Roller, the Bee-eater, the Kingfisher, the Swallow, the three Martins, the two Swifts, and the Nightjar; among which it will be perceived, from their well-known powers, that those last named have the characters pertaining to this division most strongly marked. The Roller has by several systematic authors been arranged near the Crows; but its colours, its habits, and other peculiarities, seem to prove that it is more truly allied to the Bee-eaters, *Meropidæ*, and the Kingfishers, *Halcyonidæ.*

The Roller is a native of Africa, from the northern parts of which many of them pass to Europe in the spring, returning in autumn, and are accordingly abundant at Malta, and other islands in the Mediterranean, which are resting-places on the passage. Shaw, in his History of Barbary, says, " This bird makes a squalling noise, and builds in the banks of the Sheliff, Booberak, and other rivers." M. Vieillot mentions that where trees are scarce, as in Malta, these birds are said to make their nest in the ground; and Pennant, in his Arctic Zoology, confirms this habit, from other authorities, by remarking that in places where trees are wanting, the Roller forms its nest in clayey banks. This mode of nesting and depositing its eggs is precisely similar to the habits of the Bee-eater and the King-fisher, hereafter to be described, and the eggs of each of these three birds are exactly alike in colour and shape, and only differ in size in relation to the proportions of the parent birds.

In Malta, at certain seasons, Rollers are caught in such numbers that they are exposed in the market for sale with Hoopoes, Bee-eaters, and others. The Maltese are very expert in taking these birds alive. On the European continent the Roller is said to be frequently found in the thickest and most secluded parts of the forests of Germany; some of its habits, however, are but imperfectly known; it is said to be noisy and restless, laying four eggs in the hollow of a tree, preferring the birch tree to any other, from which circumstance one of its German names is Birck-heber, or the Birch Jay. The eggs are of a delicately smooth and shining white; in shape a very short oval, measuring one inch five lines in length, by one inch one line in breadth. The food of the Roller consists of worms, slugs, insects in their various stages, and berries.

Specimens of the Roller have been killed in two or three instances in Cornwall; and three examples are said to have been met with in Ireland. This bird has been obtained more frequently in our eastern and north-eastern counties. One was killed at Oakington, in Cambridgeshire, in October 1835. Six examples are recorded to have been killed in Suffolk and Norfolk, the most recent of which occurred in 1838. Three or four specimens have been killed in Yorkshire, the last of which happened at Scarborough in 1833. Mr. Backhouse at Newcastle has a specimen in his collection killed in that vicinity, and another is recorded to have been shot at North Shields. Mr. Selby mentions that he had examined one that was found dead in the plantations of Earl Grey in Northumberland; and the bird figured from by Mr. Selby, in illustration of his own work, was killed at Dunkeld in Perthshire. M'Pherson Grant, Esq., of Edinburgh, sent me notice of a specimen obtained in the eastern part of Scotland; Sir William Jardine possesses one that was killed in Orkney; and Mr. Bullock had in his Museum in London a specimen also killed in Orkney. Müller includes the Roller in his Catalogue of the Birds of Denmark, and Pennant mentions having received a specimen from that country. Professor Nilsson says the Roller is occasionally a summer visiter to Sweden, arriving in May with the Cuckoo; it breeds there in hollow trees, and departs in September; it is seen also in the southern provinces of Russia. In some parts of Germany it is not uncommon; but according to M. Temminck, never visits Holland: it is rather rare in France; is found in Provence, and has been taken at Gibraltar. It inhabits North Africa from Tangiers to Egypt. Adanson saw flocks at Senegal, and supposed they passed the winter there; and Dr. Andrew Smith includes it in his Catalogue of the Birds of South Africa. In Italy during autumn young birds of the year are not uncommon, generally frequenting gardens. In the Morea, these birds being very fat in autumn, are sought after as a choice article of food. It has been remarked* by a traveller in Asia Minor, that "The Roller was most common throughout the south and west parts of the country, wherever the Magpie was not found; and was not seen in the same district with that bird. The Roller was observed to fall through the air like a Tumbler Pigeon." It has been taken at Aleppo. The Zoological Society have received specimens from Trebizond and Erzerum; and a Russian naturalist has found that it visits the countries lying between the Black and the Caspian Seas. M. Temminck includes it among the Birds of Japan.

In the "Life of a Travelling Physician," vol. ii. page 130, there is the following reference to the habits of this bird. "The only other object worthy of notice is the beautiful bird called the Steppe Parrot, which is common in this country (the south of Russia). It is the Roller. Its plumage is beautiful, and when flying in the sun it looks like a moving rainbow. I endeavoured several times to get near them with my gun, but in vain, they fly or roll along in their flight, and are very shy, perching on the highest branches of trees and watching continually.

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* Annals of Nat. Hist. Nov. 1839, page 213.

In Sicily M. Malherbe says, "great numbers of the Roller are seen all the summer in the woody and mountainous districts, they are wild to a degree and the bird appears to be incapable of becoming familiar. Young birds brought up from the nest become wild as soon as they are able to fly. The voice is loud and harsh.

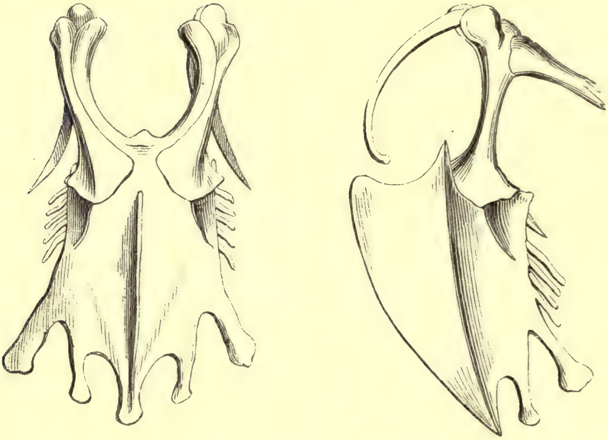
The beak is black; the irides reddish brown; behind the eye a triangular naked spot; head, neck, and wing-coverts, greenish blue, approaching in richness to verditer blue; back, scapularies, and tertials, yellowish brown; shoulders and rump China blue; upper tail-coverts Berlin blue; the two middle tail-feathers blackish green; the others, for two-thirds of their length, bluish green, the shafts black; the outer feather on each side tipped with black; the primary and secondary quill-feathers verditer blue at the base, the rest dark bluish black; chin greyish white; throat verditer; all the under surface of the body and the under wing-coverts, pale bluish green; under surface of primaries and secondaries rich Berlin blue; under surface of the tail-feathers Berlin blue for two-thirds of their length, then tipped with greyish blue; the outer elongated tail-feather on each side almost wholly blue, but tipped with dark blue; these longer outside tail-feathers distinguish the male bird: the legs and toes yellowish brown; the claws black.

The whole length of the bird thirteen inches. From the carpal joint to the end of the wing eight inches: the first quill-feather rather longer than the fourth; the second rather longer than the third, and the longest in the wing.

Adult females do not differ from males in colour.

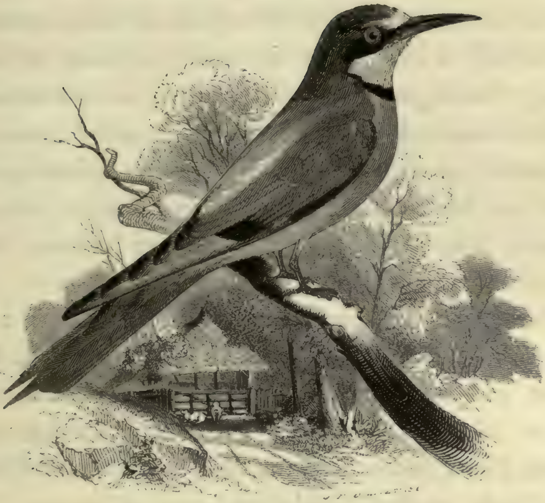
Young birds do not attain to brilliant colours till their second year, previous to which they are dull brown above, and greyish green underneath.

Beneath are representations of the breast-bone of the Roller in two different points of view.



INSESSORES.
FISSIROSTRES.

MEROPIDÆ.



THE BEE-EATER.

Merops apiaster.

Merops apiaster,	*The Bee-eater,*	PENN. Brit. Zool. vol. i. p. 339.
„ „	*Common* „	MONTAGU, Ornith. Dict.
„ „	*The* „	BEWICK, Brit. Birds, vol. i. p. 150.
„ „	„ „	FLEM. Brit. An. p. 90.
„ „	*Common* „	SELBY, Brit. Ornith. vol. i. p. 114.
„ „	„ „	JENYNS, Brit. Vert. p. 156.
„ „	*The* „	GOULD, Birds of Europe, pt. ii.
„ „	*Guepier vulgaire,*	TEMM. Man. d'Ornith. vol. i. p. 420.

MEROPS. *Generic Characters.*—Beak rather long, slender, slightly curved, pointed, the culmen elevated, the edges of the mandibles cutting, entire. Nostrils basal, lateral, oval, partly concealed by hairs directed forwards. Feet with the tarsi short, toes small, three in front, one behind, the outer toe connected to the middle toe as far as the second joint; the inner toe connected as far as the first joint. Wings long and pointed; the second quill-feather the longest in the wing.

No specimen of the Common Bee-eater of Africa appears to be recorded to have been killed in England till the summer of 1794, when a communication was made to the Linnean Society, and a specimen of this beautiful bird was exhibited by the President, Sir James Edward Smith, which had been shot out of a flock of about twenty near Mattishall, in Norfolk, in the month of June, by the Rev. George Smith, and a portion probably of this same flight, much diminished in numbers, was observed passing over the same spot in the month of October following. Since that time several have been shot in different parts of this country, which will be noticed when stating the geographical range of the species.

This bird, like the Roller last described, is a native of Africa, and according to Le Vaillant and Dr. Andrew Smith, goes nearly as far south as the Cape. It is found also at Madeira, and from Tangiers and other parts of North Africa passes over the Mediterranean, and is found periodically in considerable numbers at Gibraltar, Sardinia, Malta, and Sicily. "These birds," says Mr. Swainson, who lived four or five years in Sicily and its vicinity, "occasionally visit Italy in flocks of twenty or thirty, and may be seen skimming over the vineyards and olive plantations with a flight much resembling the Swallow, though more direct and less rapid. From the northern shores of the Mediterranean these flocks pass on to the continent before them. Colonel Montagu says, "It probably breeds in some parts of Spain and Portugal, as he was assured by an officer that it was not uncommon about Badajos, where he observed a considerable number flying about like Swallows, but that they frequently pitched, and assembled together in trees in the gardens. This was in the spring of the year 1811, while the allied army was encamped before Badajos."

In Spain these birds are also observed about the rocky country of Aragon. Polydore Roux includes them among the Birds of Provence, and a few every year frequent the southern parts of Switzerland, France, and Germany. The bird from which our figure was taken was shot in May 1827, by the bailiff of Robert Holford, Esq. at Kingsgate in the Isle of Thanet. This specimen is now in the possession of R. B. Hale, Esq. M.P. of Alderly, near Wootton-under-Edge, in Gloucestershire, who obligingly allowed me the use of it for this Work. One example of the Bee-eater is recorded by Rusticus to have been shot in a garden in the town of Godalming in Surrey a few years back; and a specimen was shot during the autumn of the present year, 1839, at Christchurch, in Hampshire, for the knowledge of which I am indebted to the kindness of my friend T. C. Heysham, Esq. of Carlisle.

In Dorsetshire, a Bee-eater was shot at Chidcock, and is now preserved in the Bridport Museum. Three specimens are recorded by Dr. Edward Moore as having been killed in Devonshire. In Cornwall, according to Mr. Couch, four specimens occurred in the parish of Madern in 1807, and a flock of twelve visited the neighbourhood of Helston in 1828, of which eleven were shot. The only instance I am aware of in which the Bee-eater has occurred in Ireland, is that recorded by Mr. Vigors in the Zoological Journal as having been killed on the sea-shore near Wexford, in the winter of 1820, and preserved in the collection of James Tardy, Esq., of Ranelagh, near Dublin.

Four or five examples of this bird have been obtained in the countries of Suffolk and Norfolk. One killed at Beccles, in the spring of 1825, is in the possession of the widow of the Rev. H. F. Howman; three others are recorded in the fifteenth volume of the Transactions of the Linnean Society. Mr. Thompson of Belfast has referred to one that was shot in October 1832 in the Mull of Galloway; and Professor Nilsson mentions that a male and female were killed in Sweden in 1816. Montagu says, "It is nowhere so plentiful as in the southern parts of Russia, particularly about the rivers Don and Wolga, in the banks of which they build their nests, perforating holes to the depth of half a foot or more for that purpose. They are said to be gregarious, as well in the breeding season as in their migrations, excavating the clayey banks so near to each other as to appear like a honey-comb. In autumn they migrate in large flocks to the more southern latitudes." These birds line their nesting-holes with soft moss, and lay from five to seven eggs, which are smooth, white, and shining, measuring about one inch in length by ten lines and a half in breadth. To follow the Bee-eater back to Africa by a different route, I may mention that it visits the the countries between the Black and the Caspian seas: the Zoological Society have received specimens from Messrs Dickson and Ross, two zealous collectors at Erzerum, who state that these birds frequent that country from May till September; it is found also in Turkey, in Greece, and in Egypt. The Bee-eater takes its food while on the wing, like the Swallows, living chiefly on winged insects, and probably derives its name from a partiality to those of the Hymenopterous order. A traveller speaking of the habits of the Bee-eater in Asia Minor, says,* "They utter a rich warbling chirp when on the wing; they are often observed among the turpentine firs, from which bees collect much honey, and are sometimes attracted to the valleys by the numerous apiaries of the peasantry." Montagu says that "In Egypt it is called *Melinoorghi*,—bees' enemy, and that the bird itself is eaten as food. At the Cape of Good

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* Annals of Nat. Hist. November, 1839.

Hope it is called Gnat-snapper, and serves as a guide to the Hottentots by directing them to the honey which the bees store in the clefts of the rocks." It has often been asked how it is that many of our small birds manage to swallow live bees, and even wasps, without appearing to suffer from their powerful stings. I believe that the bird pinches the insect, passing it from head to tail between the points of its mandibles, till by repeated compression, particularly on the abdomen, the sting is either squeezed out, or its muscular attachments so deranged that the sting itself is harmless. I have mentioned that the Bee-eater is common during summer in Greece and the islands of the Archipelago, and in Crete is said to be the most plentiful. It is in this latter island "that the curious mode of bird-catching described by Bellonius is said to be frequently practised with success, viz.,—a *cicada* is fastened on a bent pin or fish-hook, and tied to a long slender line. The insect, when thrown from the hand, ascends into the air, and flies with rapidity; the *Merops*, ever on the watch, seeing the *cicada*, springs at it, and swallowing the bait is thus taken by the Cretan boys."

In the adult male the beak is nearly black; the irides red; the lore and ear-coverts black; forehead tinged with verditer blue, which extends in a line over the eye; top of the head, neck, back, and wing-coverts, rich reddish brown, passing on the rump to saffron yellow; primary and secondary quill-feathers greenish blue, the shafts and ends black; tertials greenish blue, but without dark tips; upper tail-coverts bluish green; tail-feathers duck green, the middle pair with narrow ends extending beyond the others; chin and throat rich saffron yellow, bounded below by a bar of bluish black; breast, belly, and under tail-coverts, verdigris green, tinged with blue; under wing-coverts fawn colour; under surface of wing and tail-feathers, greyish brocoli brown; legs, toes, and claws, small, and reddish brown.

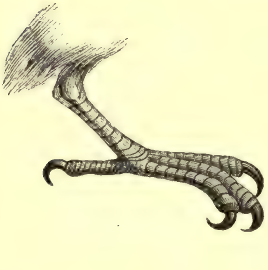
Whole length to the end of the elongated tail-feathers eleven inches. From the carpal joint to the end of the wing, five inches and three-quarters: the first feather very short, the second the longest in the wing.

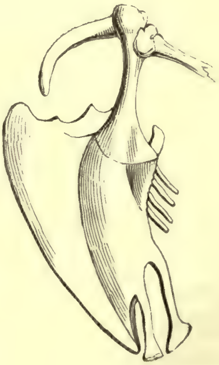
Females are not so bright in colour as the males, the yellow on the throat is paler, and the green colour tinged with red.

Mr. Hale's bird is in the plumage of the second year, in which the brown colour, which commences on the head, does not descend below the neck on to the back as in the older bird, and the whole of the back is greenish yellow where the adult bird is saffron yellow.

A young bird of the year, in my own collection, has the top of the head green, with a small patch of reddish brown above each eye; no red colour on the back; the yellow on the throat does not terminate with a dark band, and the tail-feathers are even at the end.

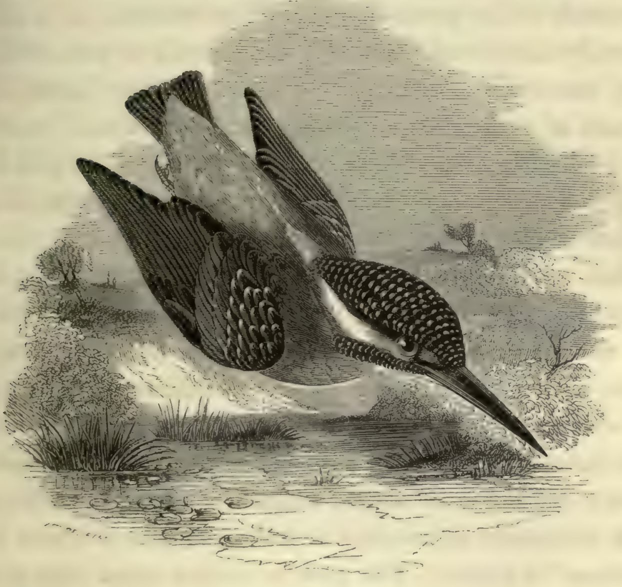
Underneath are representations of the foot and breastbone of the Bee-eater.





INSESSORES.
FISSIROSTRES.

HALCYONIDÆ.



THE KINGFISHER.

Alcedo ispida.

Alcedo ispida,	*Common Kingfisher,*	Penn. Brit. Zool. vol. i. p. 326.
„ „	„ „	Montagu, Ornith. Dict.
„ „	*The* „	Bewick, Brit. Birds, vol. ii. p. 129.
„ „	„ „	Flem. Brit. An. p. 89.
„ „	*Common* „	Selby, Brit. Ornith. vol. i. p. 136.
„ „	„ „	Jenyns, Brit. Vert. p. 157.
„ „	*The* „	Gould, Birds of Europe, pt. i.
„ „	*Martin Pecheur Alcyon,*	Temm. Man. d'Ornith. vol. i. p. 423.

Alcedo. *Generic Characters.*—Beak long, straight, quadrangular, and acute. Nostrils placed at the base of the beak, oblique, and nearly closed by a naked membrane. Feet small, tarsi short, naked; toes three in front; the external toe united to the middle toe as far as the second articulation, and the middle toe united to the inner one as far as the first; hind toe strong, but short. Wings short; the second or third quill-feather the longest.

The well-known Kingfisher is one of the most beautiful of our British birds, and will bear a comparison with many of those which are brought from climates considered more favourable to the production of brilliant colours. It is also generally distributed, though it can scarcely be said to be very numerous anywhere. It frequents the banks of streams of various sizes, whether rivers or brooks, sometimes inhabiting the vicinity of fish-ponds ; and the bird is most frequently seen when flying rapidly along near the surface of the water. Its food consists of water-beetles, leeches, minnows, stickle-backs, and probably any other species of small fish which it can seize upon by surprise. For this purpose the Kingfisher takes a station near the water, sitting on the branch of a bush or tree overhanging the stream, or on a rail by the water side, from whence it darts instantaneously upon any passing prey, and will occasionally suspend itself on the wing, hovering and watching for a favourable opportunity to make the plunge which is to secure its victim. The prey is always taken with the beak; and so unerring is the aim, that the bird seldom fails to gain the fish it strikes at, which when thus captured is brought to the usual waiting-place, and after some mutilation to produce death, is invariably swallowed head foremost.

The Kingfisher is solitary in its habits, and pugnacious in disposition, seldom to be seen with any associate except its mate during the breeding-season. At this period a pair take possession of a hole already formed by some burrowing animal, in the bank by the water side, and often but little elevated above the surface of the stream ; sometimes the Kingfisher will take to a cavity among the exposed roots of an aged tree on the river bank ; they have been known to take possession of a hole in a bank frequented by

Sand Martins at a distance from water; and Mr. Jesse relates in his Gleanings that in the summer of 1834, one of the workmen employed in the gardens of Hampton Court Palace, discovered a Kingfisher's nest in the bank of a small gravel-pit in the Wilderness of that place, and within a short distance of the public footpath leading through it, and which is much frequented. There were six eggs in the nest, which was composed as usual of small fish bones, and was placed about two feet in the bank. The small gravel-pit was perfectly dry, and the workmen were in the constant habit of throwing the sweepings of the garden into it. The old birds showed but little fear of the workmen, and this led to the discovery of the nest.

Kingfishers, like many other birds, possess the power of bringing up the contents of the stomach at pleasure. This faculty is very useful to them in reference to their nestlings, enabling the parent birds not only to bring home a larger quantity of food than they could otherwise carry, but also of partially preparing that food, and thus rendering it more suitable to the tender stomachs of their infant brood. This power of emptying the stomach is at other times only exercised to discharge the more indigestible portions of the food they swallow, as noticed in all the Birds of Prey, as also in the Shrikes, and some other birds which occasionally feed on large coleopterous insects. The rejection by the Kingfisher appears to be performed frequently when the bird is in the hole chosen as an abode, the whole ground surface of which is sometimes covered with bones of small fishes, and upon these bones the female deposits her eggs, generally from five to seven in number, of a short oval form, almost round, measuring ten lines and a half in length, by nine lines in breadth, of a smooth and shining white when blown, but previously exhibiting a delicate pink tinge from the influence of the colour of the yelk, which pervades the transparent albumen and thin shell.

The young, Mr. Gould observes, do not leave the hole till fully fledged and capable of flight; when, seated on some neighbouring branch, they may be known by their clamorous twittering, greeting their parents as they pass, from whom they impatiently expect their supplies ; in a short time, however, they commence fishing for themselves, assuming at that early age nearly the adult plumage.

Young Kingfishers, if taken from the nest, are not difficult to rear ; they require a supply of small fish for a time, but may afterwards be brought to do well on chopped beef. If kept in an aviary of sufficient size to admit a large stone trough, or tin bath, filled with clear water, in which they can be supplied with live minnows, these birds make an interesting display of their powers and mode of proceeding and may be kept in good health ; but are voracious feeders : the quantity of minnows that a brood of young Kingfishers will consume is quite extraordinary. Towards the end of autumn these birds should be separated, or the strongest will be certain to kill the weaker ones, even to the last bird. This has happened two seasons following to my friend Mr. William Rayner of Uxbridge, who living within a short distance of the river Colne is able to obtain Kingfishers as well as minnows, and whose aviary is seldom without living specimens of both.

The Kingfisher flies rapidly, with a very quick action of his short wings, and is a difficult bird to shoot when in motion. It is said to have a shrill piping note, and is known to quit inland waters on the approach of the frosts of winter, visiting for a time the flat shores of the sea.*

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* Magazine of Natural History, vol. i. p. 23.

An account of the Kingfisher would be incomplete if left without any reference to the powers attributed to this bird by some of the older naturalists and poets; and the following brief notice is therefore condensed from the pages of Pennant, and the more recently published observations of Mr. J. H. Fennell on Shakspeare's knowledge of Natural History.

It was formerly believed that during the time the Halcyon or Kingfisher was engaged in hatching her eggs, the water in kindness to her remained so smooth and calm, that the mariner might venture on the sea with the happy certainty of not being exposed to storms or tempests; this period was therefore called by Pliny and Aristotle the Halcyon Days. It was even supposed that the Kingfisher had power to quell the storm; and in reference to the dangerous situation of the female when sitting in her water-bound nest, Dryden, in his translation of Ovid's Metamorphoses, has the lines—

——————"Her sire at length is kind,
Calms every storm, and hushes every wind."

Theocritus, a Greek pastoral poet, as translated by Fawkes, has also the following line—

"May Halcyons smooth the waves and calm the seas."

W. Browne, as quoted by Mr. Fennell, writes—

"Blow, but gently blow fayre wynde,
From the forsaken shore,
And be as to the Halcyon kinde,
Till we have ferried o'er."

Shakspeare refers to the supposed influence of the Kingfisher in the First Part of Henry the Sixth—

"Expect Saint Martin's summer, halcyon days."

Cowper is perhaps the latest poet who has referred to these fancies in the following couplet—

> "As firm as the rock and as calm as the flood,
> Where the peace-loving Halcyon deposits her brood."

But this was not the only power attributed to the Kingfisher; it was also supposed that the dead bird carefully balanced and suspended by a single thread, would always turn its beak towards that point of the compass from which the wind blew. Storer, in his poem on the life, &c., of Cardinal Wolsey, says—

> "Or as a Halcyon, with her turning breast,
> Demonstrates wind from wind, and east from west."

Kent, in Shakspeare's King Lear, speaks of rogues who

> ————————"Turn their Halcyon beaks
> With every gale and vary of their masters."

After Shakspeare's allusion, Marlowe, in his Jew of Malta, has the lines—

> "But how now stands the wind?
> Into what corner peers my Halcyon's bill?"

And Mrs. Charlotte Smith, in her Natural History of Birds, says, "I have once or twice seen a stuffed bird of this species hung up to the beam of a cottage ceiling, and imagined that the beauty of the feathers had recommended it to this sad pre-eminence, till, on inquiry, I was assured that it served the purpose of a weather vane; and though sheltered from the immediate influence of the wind, never failed to show every change by turning its beak to the quarter whence the wind blew."

The Kingfisher is generally distributed over Great Britain, but is not so numerous in Scotland as it appears to be in Ireland. Müller includes it among the birds of Denmark, but considers it rare: it does not appear to be found in Sweden or Norway, nor in the more northern parts of Scandinavia. Pennant says it inhabits the temperate parts of Russia and Siberia. It is found in Germany, Holland, France, Spain, Provence, Italy, Sicily, and the Morea. Mr. Hugh Strickland says it is common in Smyrna; the Zoological Society have received specimens from Trebizond, and it inhabits the country between the Black and the Caspian seas. In Africa this species is found as far south as Senegal.

In form the Kingfisher is bulky, and heavy for its size and length, reminding the observer of the powerful body and short wings of the Dipper. The beak is about one inch and a half long from its point to the feathers on the forehead, and two inches long from the point to the angle formed by the gape; both mandibles black, except the base of the lower one, which is orange; the irides red; lore and ear-coverts reddish brown; behind the ear-coverts on the lower part of the side of the neck, an elongated white patch; from the lower mandible a green stripe passes under the eye, extending below the ear-coverts, and the white patch to the shoulder; top of the head and back of the neck dark green; some of the feathers tipped with verditer blue; upper part of the back dark green; lower part of the back, rump, and upper tail-coverts, verditer blue; wing-coverts and tertials dark green, the former spotted with verditer blue; primary and secondary quill-feathers greenish black, tinged with lighter green on the outer webs; tail-feathers indigo blue; but all the upper parts of the body, which are green in a reflected light, have more or less an appearance of blue when seen by transmitted light; chin and throat white, tinged with buff; breast, under wing-coverts, belly, vent, and under tail-coverts pale, chestnut; legs, toes, and claws, reddish brown.

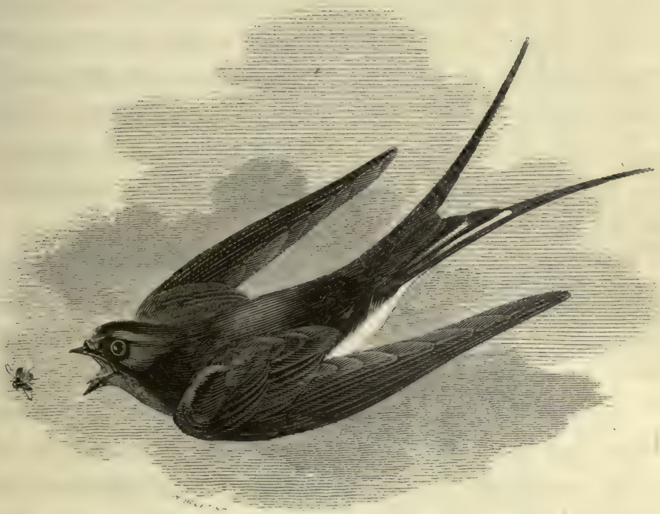
The whole length about seven inches. From the carpal joint to the end of the wing, three inches: the first four quill-feathers nearly equal in length, but the second and third are rather longer than the first and fourth.

The female has rather a smaller beak than the male, and her plumage is rather darker; there is otherwise but little difference.

Young birds have the beak wholly black, and the irides darker reddish brown.

INSESSORES.
FISSIROSTRES.

HIRUNDINIDÆ



THE SWALLOW.

Hirundo rustica.

Hirundo rustica,	*Chimney Swallow,*	Penn. Brit. Zool. vol. i. p. 543.
" "	" "	Montagu, Ornith. Dict.
" "	*The* "	Bewick, Brit. Birds, vol. i. p. 297.
" "	" "	Flem. Brit. An. p. 60.
" "	*Chimney* "	Selby, Brit. Ornith. vol. i. p. 120.
" "	" "	Jenyns, Brit. Vert. p. 157.
" "	" "	Gould, Birds of Europe, pt. xviii.
" "	*Hirondelle de Cheminée,*	Temm. Man. d'Ornith. vol. i. p. 427.

Hirundo. *Generic Characters.*—Beak very short, depressed, and very wide at the base, upper mandible curved downwards at the point, the culmen elevated. Nostrils basal, oval, partly covered by membrane. Legs short, toes slender, three in front, one behind; claws curved. Wings long and pointed.

"The Swallow," says Sir Humphrey Davy in his Salmonia, "is one of my favourite birds, and a rival of the Nightingale; for he cheers my sense of seeing as much as the other does my sense of hearing. He is the glad prophet of the year—the harbinger of the best season: he lives a life of enjoyment amongst the loveliest forms of nature: winter is unknown to him; and he leaves the green meadows of England in autumn, for the myrtle and orange groves of Italy, and for the palms of Africa." This is, in truth, a brief, but a perfect sketch of the history of the Swallow, and I have only to fill up the outline by adding the details.

The Swallow is a periodical visiter to this country, and more records are preserved of its first appearance every season than of that of any other bird. The average of many records and many seasons, seems to give the 10th of April as the mean period of its arrival; and it remains more than six months in this country, frequently on its return revisiting the precise locality it had inhabited for seasons before. Swallows are occasionally seen earlier than the date here mentioned, even in a backward spring, the migration being influenced by the temperature of the country they proceed from. In a letter written by Charles Lucian Bonaparte, Prince of Musignano, and dated on board the Delaware, near Gibraltar, March 20th, 1828, it is stated that a few days before, being five hundred miles from the coasts of Portugal, and four hundred from those of Africa, we were agreeably surprised by the appearance of a few Swallows, *Hirundo rustica* and *urbica*. The wind had blown a gale from the eastward. In that year the first Swallow seen at Carlisle, as recorded by Mr. Heysham, was on the 18th of April: the first seen in Cornwall, as recorded by Mr. Couch, was on the 17th. These birds, in crossing the Channel, Mr. Couch observes, reach the land near the shore, and in misty weather seem to have a difficulty in finding it; for I have been assured by intelligent fishermen, that, when the weather is hazy Swallows, Martins, Swifts, and other birds, are accustomed to alight on their boats at the distance of three or four leagues from land, either singly or in small flocks; at which time they appear so much fatigued, that the Swallow is often only able to fly from one end of the boat to the other, when an attempt is made to seize it. The Swallow and Martin come either singly or in small parties, and if they do not happen to be our own residents, soon pass on to their accustomed haunts; so that after two or three have been seen, it may perhaps be a fortnight before others make their appearance. In 1831 a single Swallow was seen by a fisherman near the Eddystone on the 4th of April; four were seen on the 13th at sea, flying low, and making towards the land at three o'clock, P.M. Two Martins were also seen on the 16th; but the first of either of these that I saw was on the 19th. Swallows and Martins continued to fly on board fishing-boats, at the distance of ten leagues from land, through the whole of May; my last note of that circumstance being so late as the 28th of that month. There are rarely more than two or three in a company; and considering that the Wheatear and Willow Warbler cross in safety, the state of fatigue in which they are seen is remarkable. One man informs me that in fine weather he has often seen them drop on the water, flat, and with wings expanded, and presently after fly off again, as if refreshed. The fact of the Swallow settling on the sea and flying up again, has been seen, also, and recorded by Mr. Audubon.

The migration of Swallows and Martins being in a direction nearly due north and south, those referred to in the extract from the communication of the Prince of Musignano, had been driven by the gale from the east far to the west of their true course. Gilbert White, in his ninth letter to the Hon. Daines Barrington, says, "it does not appear to me that much stress may be laid on the difficulty and hazard that birds must run in their migrations, by reason of vast oceans, cross-winds, &c.; because, if we reflect, a bird may travel from England to the equator without launching out and exposing itself to boundless seas, and that by crossing the water at Dover, and again at Gibraltar. And I with the more confidence advance this obvious remark, because my brother has always found that some of his birds, and particularly the Swallow kind, are very sparing of their pains in crossing the Mediterranean: for when arrived at Gibraltar, they do not—

> "Rang'd in figure wedge their way, and set forth
> Their airy caravan high over seas
> Flying, and over lands with mutual wing
> Easing their flight:"

but scout and hurry along in little detached parties of six or seven in a company; and sweeping low, just over the surface of the land and water, direct their course to the opposite continent at the narrowest passage they can find. They usually slope across the bay to the south-west, and so pass over opposite to Tangier, which, it seems, is the narrowest space."

Again, in his thirty-third letter to Thomas Pennant, he says, "I was much pleased to see, among the collection of Birds from Gibraltar, some of those short-winged English summer birds of passage, concerning whose departure we have made so much inquiry. Now if these birds are found in Andalusia to migrate to and from Barbary, it may easily be supposed that those that come to us may migrate back to the continent, and spend their winters in some of the warmer parts of Europe. This is certain, that many soft-billed birds that come to Gibraltar, appear there only in spring and autumn, seeming to advance in pairs towards the northward, for the sake of breeding during the summer months; and retiring in parties and broods towards the south at the decline of the year; so that the rock of Gibraltar is the great rendezvous and place of observation, from whence they take their departure each way towards Europe and Africa." It is very much to be regretted that the "Natural History of Gibraltar," written by the Rev. John White, who lived there for some years, and whose M.S. is referred to by Gilbert White, in his fifty-third letter to Daines Barrington, was never published.

To show the course pursued to the northward by some of those birds from western Africa, after crossing the Mediterranean opposite Gibraltar, where the passage is only from four to five miles wide, I may quote Mr. Hewitson, who says, that on his voyage of return from Madeira at the beginning of April 1842, whilst keeping near the coast of Spain, the deck of the steamer was a perfect levee daily, and a scene of the liveliest interest. Whilst the Chimney-swallow and the Sand-martin continued to fly round and round us, Wheatears, Whinchats, various species of warblers, Redstarts, Red-backed Shrikes, &c., were constantly passing, each appearing to me as if it had put on its gayest apparel for the occasion.

Bewick, in the introduction to his History of British Birds, says that an intelligent master of a vessel told him, that whilst he was sailing early in the spring between the islands of Minorca and Majorca, he saw great numbers of Swallows flying northwards, many of which from fatigue alighted on the rigging of the ship in the evening, but disappeared before morning. The author of the Natural History of Arragon says they arrive there very early in the spring. In the direct line of their northern course, and having passed over France, Sir Charles Wager says, "In the spring of the year, as I came into soundings in our Channel, a great flock of Swallows came and settled on all my rigging; every rope was covered; they hung on one another like a swarm of bees, the decks and carving were filled with them. They seemed almost famished and spent, and were only feathers and bone; but being recruited with a night's rest, took their flight in the morning." In reference to their return by the same line of route, Gilbert White, in his 23rd letter, says, "If ever I saw anything like actual migration, it was last Michaelmas day. I was travelling, and out early in the morning; at first there was a vast fog; but by the time I was got seven or eight miles from home towards the coast, the sun broke out into a delicate warm day. We were then on a large heath or common, and I could discern as the mist began to break away, great numbers of Swallows clustering on the stunted shrubs and bushes, as if they had roosted there all night. As soon as the air became clear and pleasant, they all were on the wing at once; and by a placid and easy flight, proceeded on southward towards the sea; after this I did not see any more flocks, only now and then a straggler."

Another line of migration pursued by these birds, as well as many others of our summer visiters, is by Malta, Sicily, and Italy, and still further to the eastward. Mr. Thompson of Belfast has published in the eighth volume of the Annals of Natural History an interesting account of the migratory birds seen by him while sailing in the Mediterranean in the spring of 1841, from which the following are extracts. "Having been favoured by my friend Captain Graves, R. N., with an invitation to accompany him during the projected government survey of the island of Candia, I, with Mr. E. Forbes, who had received from the Admiralty the honorary appointment of Naturalist on the occasion, left Malta, in H. M. S. Beacon on the 21st of April. The first port we sailed for was Navarino, for the purpose of watering the ship. The passage occupied seven days. It being just the period of the year when many species of birds which make Europe their abode only in the more genial seasons, were, after having passed the winter in Africa, crossing the Mediterranean to their summer quarters, we were often gratified by a sight of them, either passing, resting briefly on the rigging, or remaining sometimes so long as a day or more about the ship."

"April 22nd. Wind W., forty miles E. of Malta. Two Swallows remained some time about the ship, perching on the rigging, and hawking over the deck in pursuit of flies."

"April 25th. Wind N. E., fifty-eight miles from Calabria, the nearest land; one hundred and thirty-five miles from Mount Etna at sunset, when it was visible. Several Swallows about the ship."

"April 26th. Wind N. E., eighty-six miles from Zante, the nearest land; one hundred and thirty miles from Navarino. Several Swallows about the vessel during the day, and some remained, perching upon one of the boats throughout the night."

"April 27th. Wind N., forty-five miles from Zante, the nearest land, and in sight; sixty miles W. of the Morea. About a dozen Swallows which rested last night in the rigging, went off this morning. Throughout the afternoon and towards evening many more arrived, and continued flying about the ship in considerable numbers. A few Martins appeared this morning, and remained through the early part of the day, confining their flight to the lee-side of the ship; in the afternoon still more were seen hawking about in company with Swallows: as flies were numerous, they probably obtained plenty of food; at four in the afternoon all this species were gone."

Other British birds seen were the Bee-eater, Black-headed Bunting, Chiff Chaff, Glossy Ibis, Golden Oriole, Hoopoe, Nightjar, Quail, Redstart, Turtle Dove, Wagtail, Wheatear, Whitethroat, both species, Willow Wren, Woodchat, and Wryneck. "All the birds seen on migration bore right on in the course they had come, whether they rested temporarily on the vessel or otherwise. They all came from a southerly direction, either due south, south-west, or south-east. The wind was moderate, the weather fine and dry during the whole passage, so that all the species we saw were in the ordinary course of migration, and none driven to the ship by any stress of weather."

Arrived in this country, Swallows seem to prefer those habitations of man which are in the vicinity of water, whether of river or lake, probably as affording a greater abundance, as well as variety, of the winged insect food upon which they entirely subsist. These are sought for in the air during the greater part of the day, the power of flight enjoyed by these birds, and indeed by all the species of this interesting family, enabling them to remain on the wing for hours in succession in pursuit of their prey, without any apparent lassitude. In May the situation for the nest is chosen, and this, as one of the names of the bird will imply, is most frequently a few feet down an unused chimney, the bird taking advantage of any angle or depression to obtain support for the intended structure. The nest is formed of small portions of moist earth, which the bird may be seen on the ground collecting at the edges of ponds, and sometimes at the margins of puddles by road sides. The pellets of soft clay are carried home to the place chosen, there to be moulded with straw and bents into an open saucer-shaped nest, which is afterward lined with feathers. The eggs are generally from four to six in number, nine lines and a half in length, by six lines and a half in breadth, white, speckled with ash colour and dark red. Two broods are produced in the season, the first of which is usually ready to fly by the end of June, and the second by the end of August. But a chimney is not the only place chosen by the Swallow for its nest: in the north of England these birds frequently build in the unused shafts of mines, or in old wells; sometimes under the roof of a barn or open shed, between the rafters and the thatch or tiles which form the covering. Turrets intended for bells are frequently resorted to, and unused rooms or passages in outhouses, to which access can be gained by the round hole so frequently to be observed cut in the doors to such buildings, and within which the birds take advantage of any projecting peg, or end of a beam, that will serve as a buttress to support the nest. I have heard of a nest made by a pair of Swallows in the half open drawer of a small deal table in an unoccupied garret, to which access was obtained by a broken pane of glass. Pennant mentions an instance in which a pair of Swallows attached their nest to the body and wing of an Owl nailed against a barn; this specimen was preserved in the museum of the late Sir Ashton Lever, and is now in my own collection. A provincial paper furnished the following notice. A small steamer, the Clarence, lies at Annan Waterfoot, and plies between it and Port Carlisle, in the way of tugging vessels. A pair of Swallows built their nest last year under the sponsons of one of the paddle-wheels, not more than three feet above the water, and succeeded in bringing forth their young. There they are this summer again. During neap tides the Clarence plies every other day, and often every day. When she leaves the Waterfoot, the birds leave her, and keep on the Scotch side; and when she returns, and is nearing Annan, the Swallows invariably meet her, and accompany her to her berth.

Another most unusual selection of a situation for a Swallow's nest is that which forms the subject of the vignette to the present article, and for the opportunity of figuring which I am indebted to the kindness of William Wells, Esq. of Redleaf. This nest was built on the bough of a sycamore, hanging low over a pond at the Moat, Penshurst, in Kent, in the summer of 1832. Two sets of eggs were laid in it: the first brood were reared, but the second died unfledged. The vignette was executed from a drawing made by Mr. Edward Cooke, at the request of Mr. Wells, and obligingly devoted to my use.

The note of the adult Swallow is a soft and sweet warble, and the attention paid by the parent birds to the wants of their young is incessant, returning to the nest with food once in every three minutes throughout a great portion of the day; yet is the law of migration sometimes of an influence so powerful, that they have been known to desert their young, and leave them to perish in their nests. But as this circumstance has been more particularly observed in the Martin, next to be described, it will be referred to more at length in that place. On the young birds first leaving their nest, "they perch for a few days on the chimney top, or on the roof of the house, and are there fed by their parents. Their next essay is to reach some leafless bough, where they sit in rows, and receive their food. Soon after they take to the wing, but still want skill to seize their own prey. They hover near the place where their parents are in chase of flies, attend their motions, meet them, and receive from their mouths the offered sustenance."

When the young broods have entirely left their nests they roost by hundreds among willows and osiers near water till the time for their departure from this country arrives, when they leave us in large flocks to seek a more southern latitude, there to enjoy a continuance of that temperature and means of subsistence which these islands from geographical position can no longer afford them. They generally leave by the end of October, but stragglers are sometimes seen as late as the middle of November.

In confinement these birds become exceedingly tame, and in this state it has been ascertained by naturalists in this, as well as in other countries, that these birds moult in January and February. An account of the mode pursued will be found in Bewick's History of British Birds; and the Rev. W. F. Cornish of Totness, who is known to be very skilful in his management of birds in confinement, sent me word, that of two Swallows given him, one lived a year and a half, and the other two years. It has been observed by the Rev. Walter Trevelyan that these birds, like other feeders on insects, bring up the indigestible parts of their food in small pellets, called castings.

The Swallow is common in summer throughout all the British Isles, and visits Denmark, Sweden, and Norway. M. Nilsson says it arrives in Sweden early in May, and retires in September. It does not go so far north as our

Martin, but it remains a little later, as I am informed by Richard Dann, Esq. who has passed several seasons in Norway and Lapland, and who tells me also that there is no want of food for them, as the morasses in the sheltered valleys swarm with insects.

Pennant says the Swallow visits the southern parts of Siberia; and a Russian naturalist has included it among the summer birds of the countries between the Black and the Caspian seas; it is also found at Erzerum from April till September. Swallows leaving Italy, which they all do in autumn, go off in the direction for Egypt, and have been seen in Egypt going still farther south. Bruce saw the Swallow in Abyssinia in winter. In Napier's "Reminiscences of Syria," it is stated that Swallows were seen near Esdroëlon on the march to Naplouse in December and January; our Swallow is included by B. H. Hodgson Esq., in his catalogue of the birds of Nepal, and Mr. Blyth has obtained it in the neighbourhood of Calcutta. Those from the western parts of Europe go to Western Africa. Sir William Jardine includes it among the birds of Madeira. Adanson in 1783, and Afzelius in 1793, saw the Swallow on the river Senegal and at Sierra Leone in that period of the year when it is absent from Europe. Mr. Tudsbury, of Chesterfield, who resided at Sierra Leone and Rio Nunez from 1821 to 1828, says the Swallow, the Martin, and the Swift, are seen all the year in the neighbourhood of these two places; but that they are less numerous in the rainy season from June to September.—Mag. Nat. Hist. vol. v. p. 449. To this I may add, that Mr. George Don told me he saw the Swallow, the Martin, and the Swift, at the Island of St. Thomas, on the equator, in the months of January and February in 1822.

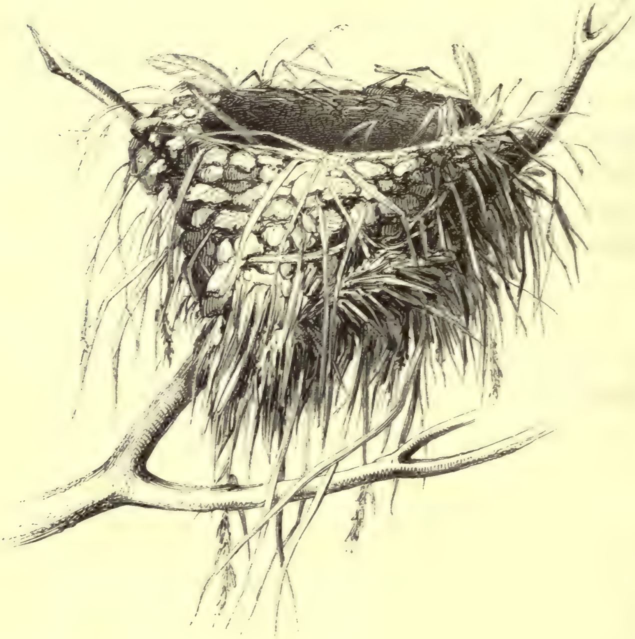
In the adult male the beak is black, the ridge elevated, the gape wide; irides hazel; forehead chestnut; head, neck, back, wing-coverts, tertials, rump, and upper tail-coverts, shining steel blue; primary and secondary quill-feathers dull black; tail very much forked, the outer feather on each side as long again as the others, and nearly black, with an elongated patch of white on the inner web, commencing near the base, and terminating a little short of the end of the second feather, which, with the three tail-feathers next in succession, have each a rounded white patch on the inner web, and each also decrease in length; the two middle tail-feathers are the shortest of the whole, also dull black, and have no white on either web. The chin and throat are chestnut, below that a bluish black band which terminates in a straight line across a little below the bend of the wing; breast, under wing-coverts, belly, and under tail-coverts, buffy white; legs and toes slender and black; claws sharp and black.

Whole length eight inches and a half, of which the very elongated outside tail-feathers measure nearly five inches; the wings long and pointed, reaching beyond the end of the second tail-feather; from the carpal joint to the end of the wing five inches; the first and second quill-feathers nearly equal in length, but the first rather the longer of the two.

The female has a smaller chestnut-coloured spot on the forehead; the dark band across the breast is narrower; the under surface of the body is less tinged with buff; the upper part of the body not so fine in colour, and the outside tail-feathers are shorter.

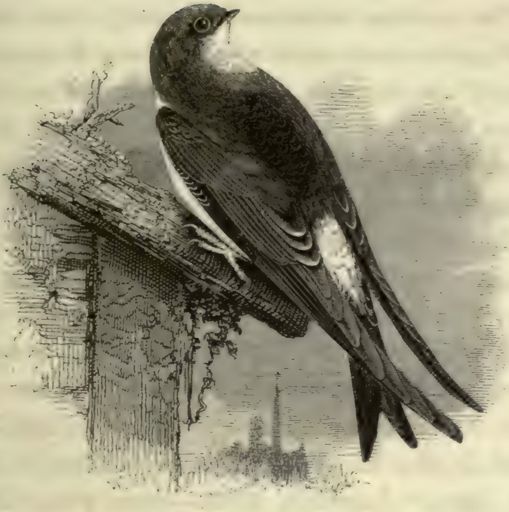
The young of the year have no chestnut colour on the forehead; the throat is merely tinged with rufous; the band across the throat is but faintly indicated; the first set of tail-feathers are nearly square at the end, without white spots on the webs. The long tail-feathers are not acquired till the first moult.

White and buff-coloured varieties are not uncommon.



INSESSORES.
FISSIROSTRES.

HIRUNDINIDÆ.



THE MARTIN.

Hirundo urbica.

Hirundo urbica,	*Martin Swallow,*	Penn. Brit. Zool. vol. i. p. 547.
" "	*The Martin,*	Montagu, Ornith. Dict.
" "	" "	Bewick, Brit. Birds, vol. i. p. 303.
" "	" "	Flem. Brit. An. p. 61.
" "	" "	Selby, Brit. Ornith. vol. i. p. 123.
" "	*House* "	Jenyns, Brit. Vert. p. 158.
" "	*The* "	Gould, Birds of Europe, pt. xviii.
" "	*Hirondelle de fenêtre,*	Temm. Man. d'Ornith. vol. i. p. 428.

The spring appearance of the Martin in this country is usually a few days later than that of the Swallow. The Martin seems to commence its northern migration in Africa, and to cross the Mediterranean, resting occasionally on some of its numerous islands, in company with the Swallow; but having comparatively a smaller wing, its relatively diminished powers of flight require longer time to perform the distance. Like the Swallow, the Martin also endeavours to establish itself about the habitations of man. The opinion entertained by many that they are birds of good omen, with which it would at least be unlucky, if not improper, to interfere, and the degree of confidence exhibited by the birds themselves, in their choice of situation, seem to have induced a general prepossession in their favour, which their innocent and useful lives fully entitle them to enjoy. The habits of the Martin, in many instances, closely resemble those of the Swallow. That they return to the places, and even to the nests, which they inhabited during previous seasons has been frequently stated, and there appears to be no reason to doubt it. Gilbert White, in that part of his Journal published in the second series of Gleanings in Natural History, says, "July 6th, 1783.—Some young Martins came out of the nest over the garden door. This nest was built in 1777, and has been used ever since." Their nests, as every one has seen, are fixed under the eaves of houses, or in the upper angles of windows, and hence its name of House Martin, and Window Martin. While the building of their nests is in progress, these birds are frequently to be seen on the ground in damp places, collecting the mud or clay of which the outside of the nest is composed. M. Vieillot says they select worm casts for this purpose. The earth probably becomes still further moistened with a portion of saliva from the bird, by which its tenacity is increased. White remarks "A Martin has built its nest against the glass of a window. It seems to stick firmly, and has no other support." The hemispheric form of the nest, when finished, is well known: while in progress, a single layer only of soft earth is laid on along the whole line, day after day, which is thus allowed to become hard before additional weight is superadded. When the external circular wall is finished, the cavity within is lined with a few bents of hay and some soft feathers, and the nest thus completed is frequently occupied by both birds at the same time, who thus appear to enjoy the habitation their united industry has achieved. In some instances these birds build under projections against the surface of high cliffs, as those referred to by Mr. Couch on the Cornish coast, and others mentioned by Mr. Selby as occurring about St. Abb's Head, on the coast of Berwickshire.

The Martin produces three, and sometimes even four broods in the season. Dr. Jenner, writing from home, says, "A pair of Martins hatched four broods of young ones in the house of a tradesman in this place in the year 1786. The latter brood was hatched in the early part of October. About the middle of the month the old birds went off, and left their young ones, about half fledged, to perish. The pair returned to the nest the 17th of May, 1787, and threw the skeletons out."

The eggs are four or five in number; they are smooth and white, measuring nine lines and a half in length, and six lines in breadth. Incubation lasts thirteen days. The young are at first fed by the old birds going into the nest to them; after a time, the young thrust their heads out at the opening on the arrival of either parent bird, who feeds them while hanging on by their sharp crooked claws to the rough outside of the nest. The old female begins to lay again as soon as each young brood is able to leave the nest. As the season advances a smaller number of eggs are produced; but White says they are never without unfledged young ones as late as Michaelmas.

The subject of the Martins deserting their young has been adverted to. This singular fact in their economy has been particularly attended to by Mr. John Blackwall, and the following particulars are derived from that gentleman's published "Researches in Zoology." It did not come to my knowledge that these late broods are sometimes deserted by the parent birds before they are capable of providing for themselves, till the spring of 1821; when a pair of House Martins, after taking possession of a nest which had been constructed in the preceding summer, drew out the dried bodies of three nearly full-fledged nestlings which had perished in it, preparatory to appropriating it to their own purposes. About the same time, and near the same spot, a similar attempt was made by another pair of House Martins; but all their efforts to dislodge the young proving ineffectual, they entirely closed up the aperture with clay, and so converted the nest into a sepulchre. At first I was disposed to attribute the untimely fate of the nestlings, thus unexpectedly discovered, to the accidental destruction of one or both of the parents; but a little reflection induced me to change my opinion. So many instances were called to mind of the sudden departure of House Martins, at periods when, to all appearance, they were most busily engaged in providing for their families, that what before was regarded as the unavoidable consequence of a fortuitous circumstance, I now began to suspect might be occasioned by a voluntary act of desertion. To clear up this doubtful point several examinations were made, at the second of which on the 22nd of October, 1822, several nests, both of Swallows and Martins, were found to contain dead young ones. At a third search on the 19th of November, 1825, fourteen nests were examined; five of them contained dead nestlings, and one nest contained two eggs, whose contents very evidently showed that they had been forsaken when on the point of being hatched. A fourth search was made on the 11th of November 1826, when it was found that of twenty-two nests then examined, eight of them contained dead young birds, amounting together to nineteen ; and five nests contained eggs amounting together to sixteen. Mr. Blackwall mentions having seen a pair of House Martins feeding their unfledged young as late as the 20th of October. Young birds in the nest have been seen also in other parts as late as the 21st and 23rd of October.

About the middle of October, however, Martins generally leave this country in large flocks, having previously assembled on house-tops, about churches, and lofty trees. White saw a small flock as late as the 3rd of November. A flock of more than one hundred were seen collected at Dover on the 13th of November 1831, and apparently going off. Montagu, in his Supplement, mentions having seen Martins daily in the neighbourhood of Kingsbridge as late as the 15th of November, in the year 1805. A flock of two hundred were seen at Barnstaple on the 17th of November 1838 ; and the Rev. W. F. Cornish mentions having seen one, near the cliff, over the brook, at Sidmouth, in a warm situation fronting the south, so late as the 10th of December, in 1835.

The Martin is a regular summer visiter to the British Islands, and considerable numbers go annually to Denmark, Sweden, Norway, and the southern part of Lapland. Mr. Lloyd, in his Field Sports of the North of Europe, mentions that in Lapland he has frequently seen numbers of pots attached to houses, placed there to induce the Martins to build in them, in order to secure the benefit of their services in devouring the musquitoes. The Fabers, and other northern naturalists, include our Martin among the regular summer visiters to the Faroe Islands, and even to Iceland. Pennant says it is common in Siberia, and from thence southward is found in most of the countries visited by the Swallow. On its passage in spring and autumn it visits many of the islands of the Mediterranean.

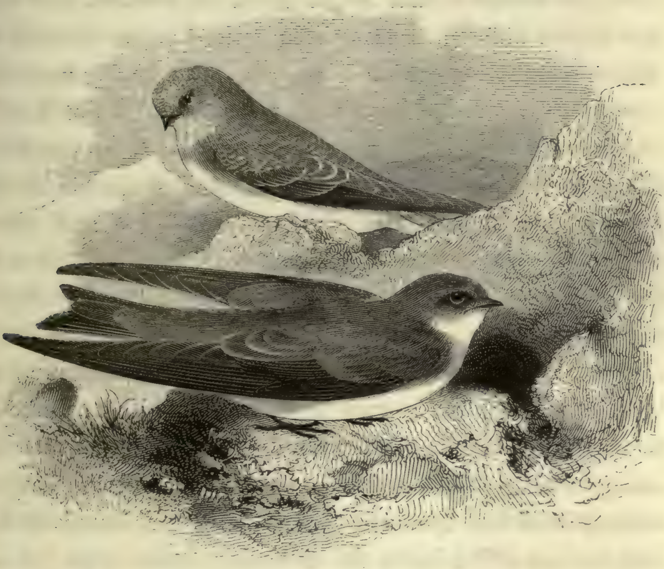
In the adult male bird the beak is short and black; the irides brown; the top of the head, ear-coverts, back of the neck, wing-coverts, and back, are of a rich, glossy, bluish, black; rump, and upper tail-coverts, white; feathers of the wings and tail, dull black: the wings reaching to the end of the tail, which is forked; chin, and all the under surface of the body, white; legs and toes small, and covered with short downy white feathers; claws curved, sharp, and of a greyish horn colour.

The whole length rather exceeding five inches and one quarter. From the carpal joint to the end of the first quill-feather of the wing, which is the longest, four inches and one quarter.

There is but little distinction between the sexes. Females and young birds of the year are not so pure in colour above, and the chin and throat are of soiled or greyish white.

White varieties of the Martin are sometimes obtained.

INSESSORES. *HIRUNDINIDÆ.*
FISSIROSTRES.



THE SAND MARTIN,

OR BANK MARTIN.

Hirundo riparia.

Hirundo riparia,	*Sand Martin,*	**Penn.** Brit. Zool. vol. i. p. 549.
" "	" "	**Montagu**, Ornith. Dict.
" "	" "	**Bewick**, Brit. Birds, vol. i. p. 305.
" "	" "	**Flem.** Brit. An. p. 61.
" "	" "	**Selby**, Brit. Ornith. vol. i. p. 125.
" "	*Bank* "	**Jenyns**, Brit. Vert. p. 158.
" "	*Sand* "	**Gould**, Birds of Europe, pt. xiii.
" "	*Hirondelle de rivage,*	**Temm.** Man. d'Ornith. vol. i. p. 429.

The Sand Martin is the smallest in size of the species of *Hirundo* visiting this country. It makes its appearance here a little earlier than the Swallow or Martin; but not frequenting the habitations of men, its annual return is not so regularly or so generally noticed. Mr. Heysham, however, has recorded that so far north as Carlisle, this bird has in two different seasons been noticed before the end of March; and there are other records of its having been observed in Cumberland on the 4th and on the 11th of April.

Like the species already described, this little wanderer comes to this country from Africa, and frequents as its nesting-place high banks of rivers, sand-pits, and other vertical surfaces of earth that are sufficiently soft in substance to enable the bird to perforate it to the depth necessary for its purpose. In such situations this little engineer forms circular holes in a horizontal direction, boring to the depth of two feet or more, with a degree of regularity, and an amount of labour, that is rarely exceeded among birds. The mode in which this perforation is accomplished has been well described by Mr. Rennie in his architecture of birds, in the following terms, page 18:—"The beak is hard and sharp, and admirably adapted for digging; it is small, we admit, but its shortness adds to its strength, and the bird works, as we have had an opportunity of observing, with its bill shut. This fact our readers may verify by observing their operations early in the morning through an opera glass, when they begin in the spring to form their excavations. In this way we have seen one of these birds cling with its sharp claws to the face of a sandbank, and peg in its bill as a miner would do his pickaxe, till it had loosened a considerable portion of the hard sand, and tumbled it down amongst the rubbish below. In these preliminary operations it never makes use of its claws for digging; indeed, it is impossible it could, for they are indispensable in maintaining its position, at least when it is beginning its hole. We have further remarked that some of these Martins' holes are nearly as circular as if they had been planned out with a pair of compasses, while others are more irregular in form; but this seems to depend more on the sand crumbling away than upon any deficiency in the original workmanship. The bird, in fact, always uses its own body to determine the proportions of the gallery,—the part from the thigh to the head forming the radius of the circle. It does not trace this out as we should do, by fixing a point for the centre around which to draw the circumference: on the contrary, it perches on the circumference with its claws, and works with its bill from the centre outwards: and hence it is that in the numerous excavations recently commenced, which we have examined, we have uniformly found the termination funnel-shaped, the centre being always much more scooped out than the circumference. The bird consequently assumes all positions while at work in the interior, hanging from the roof of the gallery with its back downwards as often as standing on the floor. We have more than once, indeed, seen a Bank Martin wheeling slowly round in this manner on the face of a sandbank, when it was just breaking ground to begin its gallery.

All the galleries are found to be more or less tortuous to their termination, which is at the depth of from two to three feet, where a bed of loose hay, and a few of the smaller breast-feathers of geese, ducks, or fowls, is spread with little art for the reception of the eggs. It may not be unimportant to remark, also, that it always scrapes out with its feet the sand detached by the bill; but so carefully is this performed that it never scratches up the unmined sand, or disturbs the plane of the floor, which rather slopes upwards, and of course the lodgement of rain is thereby prevented."

The eggs are from four to six in number; white, like those of the House Martin, but smaller, measuring only eight lines in length, by six lines in breadth. The Sand Martins are sociable birds, building in company close to each other; and in some favourable localities the external apertures to their retreats, which are all that can be seen of their domicile, are very numerous,—so much so that the surface of the bank appears perforated like a honey-comb. "The nestlings," says White, "are supported, in common like those of their congeners, with gnats, and other small insects; and sometimes they are fed with *Libellulæ* (dragon-flies) almost as long as themselves. In the last week in June we have seen a row of these sitting on a rail near a pool as perchers; and so young and helpless, as easily to be taken by hand; but whether the dams ever feed them on the wing, as Swallows and House Martins do, we have never yet been able to determine." When on the wing in search of food they skim low over meadows and commons; they also drink, sip, and wash as they fly, sometimes, as the House-Martin and the Swallow. The young, when they have entirely left the nest to make room for the second brood, roost in numbers among the osiers which grow on the small islands, and on the banks of rivers. "The Sand Martin, I believe," says Mr. Blackwall, "has never been suspected of forsaking its progeny; yet that it sometimes does abandon them I have clearly ascertained, by repeated inspections of the nests of that species during the winter months."

The Sand Martin is generally, but locally, distributed over the British Islands. Mr. Thompson of Belfast says it is a regular summer visiter to Ireland, but is not so numerous as the Swallow or the House Martin. It visits also the Orkneys and Shetland. Müller includes it as a bird of Denmark. M. Nilsson says it visits Sweden, and Mr. Hewitson saw it in Norway. It is found in summer in the more temperate parts of Russia and Siberia, and from thence over all the southern parts of the European continent, from which it passes towards the end of autumn across the Mediterranean to Africa, and is believed to go nearly as far south as the Cape. The Sand Martin rests at various islands while crossing the Mediterranean ; and M. Malherbe says that some remain in Sicily through the winter, and Vieillot says it is resident at Malta all the year round. Major James Franklin brought specimens from India, which were exhibited with his collection at the Zoological Society ; it has been found in the north-western part of India ; and Mr. Blyth has obtained it near Calcutta. In North America, according to the testimony of Wilson, Mr. Audubon, and Dr. Richardson, this species is found from Florida over the United States, and as high as the 68th parallel, where they were seen in the month of July ; but they are not supposed to produce more than one brood in a season anywhere north of Lake Superior.

The adult birds have the beak dark brown, nearly black ; the irides hazel ; the head, neck, back, wing-coverts, rump, and upper tail-coverts, uniform hair-brown, or mouse-brown ; the quill-feathers of the wing and the tail-feathers darker brown, almost blackish brown ; chin, throat, breast, belly, and under tail-coverts, pure white ; across the upper part of the breast a band of hair-brown ; legs, toes, and claws, dark brown, with a few short buffy white feathers on the posterior edge of the tarsus, just above the junction of the hind toe.

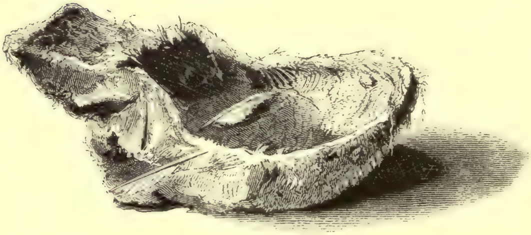
The whole length four inches and three-quarters. From the carpal joint to the end of the wing four inches : the wings, when closed, reaching beyond the end of the tail, which is forked; the first quill-feather in the wing is the longest; the others in succession diminishing gradually.

Young birds of the year, before leaving this country, have the brown feathers of the back and upper tail-coverts, as also those of the wing-coverts and the tertials, tipped with buffy white, as shown in the upper figure of the two representations given at the head of this subject; the chin is also buffy white.

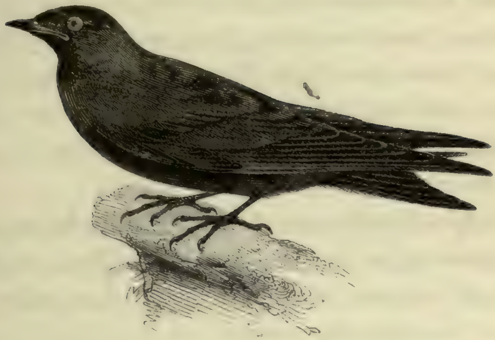
White and yellowish white varieties of the Sand Martin are occasionally obtained.

The upper figure in the illustration represents a young bird of the year; the other is from an adult bird.

The vignette below represents the edible nest of the Chinese Swallow. These nests, which look something like isinglass, are, when cleaned and broken in pieces, served up to table in chicken broth; they eat short, like cartilage, and are perfectly flavorless.



INSESSORES. *HIRUNDINIDÆ.*
FISSIROSTRES.



AMERICAN PURPLE MARTIN.

Hirundo purpurea.

Hirundo purpurea,	*Purple*	*Martin,*		Wilson, Amer. Orn. vol. i. p. 58.
„	„	„	„	Audubon, Orn. Biog. vol. i. p. 115, pl. 22.
„	„	„	„	Nuttall, Man. vol. i. p. 598.
„	„	„	„	Aud. Birds of America, v. i. p. 170.

The Purple Martin of the American ornithologists, Wilson, Audubon, and Nuttall, is here included in consequence of a letter received from Mr. Frederick M'Coy, of Dublin, informing me that a female example of this species had been shot near Kingston, in the county of Dublin, which had been sent for dissection to Dr. Scouler a few hours afterwards, and when preserved was placed in the Museum of the Royal Dublin Society.

During the first week of September 1842, two other examples of this same species were shot by Mr. John Calvert, of Paddington, at the Kingsbury Reservoir. One of these specimens was lent me by F. Bond, Esq.; it is a young bird of the year, and the outside tail-feathers are not fully grown up. From this bird the figure here inserted was taken. Since then Mr. John Calvert very kindly brought me his bird to examine, and this proves to be an old male, rather larger than the young bird, and of very brilliant plumage. These two birds, though shot during the same week, were not both killed on the same day, two or three days intervened, and the brood might therefore have been raised in this country.

The Purple Martin, according to Mr. Audubon, makes its appearance in the city of New Orleans from the first to the ninth of February, occasionally a few days earlier. At the falls of the Ohio they arrive from the 15th to the 25th of March; at Philadelphia they are first seen about the 10th of April; they reach Boston about the 25th, and continue their migration much farther north, as the spring continues to open. From the circumstance of these Martins leaving the United States early in August, Mr. Audubon is inclined to consider that they may go farther south from them than any others of the American migratory land birds. Interesting accounts of the habits of this species, and the partiality entertained by the Americans for them, will be found in the works of the Naturalists already quoted at the head of this subject.

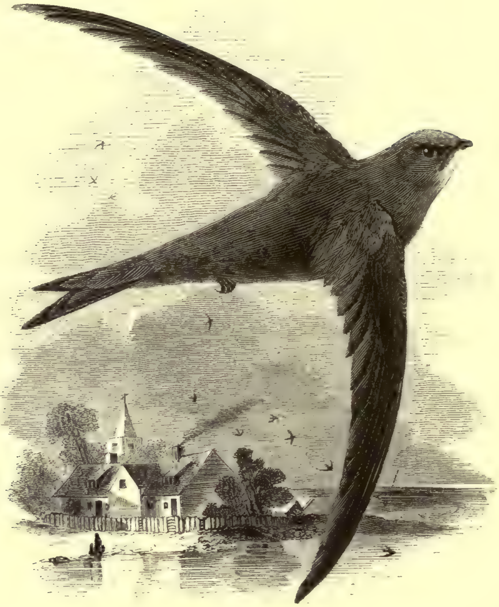
Mr. Audubon says, " I had a large and commodious box built and fixed on a pole, for the reception of Martins, in an enclosure near my house, where for some years several pairs had reared their young. The erection of such houses is a general practice, the Purple Martin being considered as a privileged pilgrim, and the harbinger of spring. Almost every country tavern has a martin-box on the upper part of its sign-board. All our cities are furnished with houses for the reception of these birds; and it is seldom that even lads bent upon mischief disturb the favoured Martin. He sweeps along the streets, here and there seizing a fly, hangs to the eaves of the houses, or peeps into them, as he poises himself in the air in the front of the windows, or mounts high above the city, soaring into the clear sky. The flight resembles that of the *Hirundo urbica*."

In the Middle States, the nest of the Purple Martin is built, or that of the preceding year repaired and augmented, eight or ten days after its arrival, or about the 20th of April. It is composed of dry sticks, willow twigs, grasses, leaves green and dry, feathers, and whatever rags he meets with. The eggs, which are pure white, are from four to six. Many pairs resort to the same box to breed, and the little fraternity appear to live in perfect harmony. They rear two broods in a season. The first comes forth in the end of May, the second about the middle of July. In Louisiana, they sometimes have three broods.

Bill stout, black; head, neck, back, upper tail-coverts, and all the under surface of the body shining purple-blue; wings and tail-feathers black, the primaries edged with brown; the wing-coverts tinged with blue; legs and feet blackish-brown. Whole length six inches and three-quarters; wing from the carpal joint to the end of the longest feather five inches and a half. The female with the upper parts paler, and tinged with grey, the lower parts light grey, longitudinally streaked with black.

INSESSORES.
FISSIROSTRES.

HIRUNDINIDÆ.



THE COMMON SWIFT.

Cypselus apus.

Hirundo	*apus,*	*Swift Swallow,*	Penn. Brit. Zool. vol. i. p. 550.
„	„	*The Swift,*	Montagu, Ornith. Dict.
„	„	„ „	Bewick, Brit. Birds, vol. i. p. 306.
Cypselus	„	„ „	Flem. Brit. An. p. 61.
„	*murarius,*	*Common* „	Selby, Brit. Ornith. vol. i. p. 127.
„	*apus,*	„ „	Jenyns, Brit. Vert. p. 159.
„	*murarius,*	*The* „	Gould, Birds of Europe, pt. ii.
„	„	*Martinet de Muraille,*	Temm. Man. d'Ornith. vol. i p. 434.

Cypselus. *Generic Characters.*—Beak very short, triangular at its base, wide, concealed, depressed, gape extending beyond the eyes; upper mandible, hooked at the point. Nostrils longitudinal, near the ridge of the beak, open, the edges raised and furnished with small feathers. Tarsi very short; toes four, all directed forwards and entirely divided; claws short, strong, and curved. Wings very long; the first quill-feather a little shorter than the second.

The generic characters here inserted show the difference which exists in the structure of the foot and in the wing of the Swift as compared with the same parts in the species of the genus *Hirundo*, previously described. The great extent of wings, moved as they are by very large and powerful muscles, afford that decided power of flight which all have witnessed; and the range of the toes, all four of which are turned to the front, assist these birds materially when climbing within the narrow apertures which they select for their nesting-places.

The Swift comes to this country from Africa, and most probably by the same route as that pursued by the Swallow and the Martin; it generally appears early in May, and without more variation than is observed in the arrival of the other species of this family; but the greater part of them leaving us again by the middle of August, their stay here seldom much exceeds three months. Swifts have been found to return to the districts, and even to the nests, they have inhabited during previous seasons, as the following paragraph will show:—"It is a remarkable fact," says Dr. Jenner, "that the Swallow tribe, and probably many other birds, which absent themselves at stated periods, should return annually to the same spot to build their nests. The Swift, which for nine months has some distant region to roam in, was selected for the purpose of an experiment to ascertain this with precision. At a farmhouse in this neighbourhood, (Berkeley, Gloucestershire,) I procured several Swifts, and by taking off two claws from the foot of twelve, I fixed upon them an indelible mark. The year following their nesting-places were examined in an evening when they had retired to roost, and there I found several of the marked birds. The second and third year a similar search was made, and did not fail to produce some of those which were marked. I now ceased to make an annual search, but at the expiration of seven years, a cat was seen to bring a bird into the farmer's kitchen, and this also proved to be one of those marked for the experiment."

The Swift chooses for its nesting-place cavities under the eaves of houses, holes about steeples, or in the old walls of lofty towers, and in high windy days will remain for hours in its retreat, motionless, and in the dark. How great is the contrast when on other occasions it is seen darting rapidly, or wheeling in circles, and screaming aloud, while in pursuit of its insect food ; at one time sailing with ease and pleasure at an elevation where the bird is scarcely perceivable, and at another passing the angle of a building, as has been observed, with the almost inconceivable swiftness of a meteor. Great power of vision seems indispensable both to enable the bird to obtain its food, as well as to insure its safety under such rapid movements ; nor is even this power always sufficient to guard it against accident : a Swift on eager wing was seen in its flight to be carried against a wall, it was picked up stunned, and died almost immediately in the hand of the observer.

The nest is formed of bits of straw, dry blades of grass and bents, bits of rag, and a few feathers, and being used for years in succession, has the appearance of being much compressed, and the various materials seem glued together by saliva, or some mucous secretion, which is supposed to be deposited by the birds themselves. Swifts are generally considered to lay but two eggs ; but Mr. Salmon has found that they produce three, and sometimes even four eggs. These are white, and rather large, measuring one inch in length, by eight lines in breadth. The young are not hatched till towards the end of June, and there is reason to suspect that they are slow of growth: they do not leave the nest till the end of July, sometimes still later. The young, though zealously fed by the parent birds while they remain in the nest, are but little attended to afterwards, and in some instances the whole family leave the country together as soon as the young are able to sustain themselves firmly on the wing. Unless some accident happens to the first eggs, the Swift produces but one set in the season. "I have just met with a circumstance respecting Swifts," says Gilbert White, "which furnishes an exception to the whole tenor of my observations, ever since I have bestowed any attention on that species of *Hirundines*. Our Swifts, in general, withdrew this year (1781) about the first day of August, all save one pair, which in two or three days was reduced to a single bird. The perseverance of this individual made me suspect that the strongest of motives, that of an attachment to her young, could alone occasion so late a stay. I watched, therefore, till the twenty-fourth of August, and then discovered that under the eaves of the church, she attended upon two young, which were fledged, and now put out their white chins from a crevice. These remained till the twenty-seventh, looking more alert every day, and seeming to long to be on the wing. After this day, they were missing at once; nor could I ever observe them with their dam coursing round the church, in the act of learning to fly, as the first broods evidently do. On the thirty-first I caused the eaves to be searched, but we found only two callow dead Swifts, on which a second nest had been formed." Now, although the maternal affection of the female bird, says Mr. Blackwall, in the instance before us, was sufficiently powerful to induce her to remain with her young till they were capable of accompanying her in a distant journey, to a more genial climate, as is sometimes the case with House Martins when deserted by their mates; yet the conduct of the male, if it does not absolutely establish the fact that Swifts occasionally abandon their offspring to destruction, certainly affords strong presumptive evidence in its favour. Mr. Salmon, in the tenth volume of the Magazine of Natural History, has recorded another curious instance in reference to the Swift. A pair of these birds continuing after the usual time to visit a particular spot, the situation was examined on the 2nd of September, and in the nest were found a pair of young, probably only a week old. The parent birds continued to feed them; on the 1st of October they were ready to fly; neither the old nor the young birds were seen after the 4th; on the 5th the nest was examined, and found empty. "Thus," says Mr. Salmon, "this pair of birds remained in this country nearly seven weeks after all their associates had departed."

Although the greater portion of the Swifts that visit, or are reared, in this country, take their leave by the middle of August, stragglers,—probably some of those that have visited more northern countries,—are also occasionally seen much later. R. B. Hale, Esq. M.P. of Alderley, saw one in Gloucestershire on the 9th of September, in the present year, 1839. One Swift was seen by Mr. Blackwall on the 20th of October, 1815. A single Swift was seen in Perthshire on the 8th of November 1834; and the Rev. Mr. Cornish saw one in Devonshire in the year 1835 so late as the 27th of November.

The Swift is generally distributed during its visiting season over England, and is a regular summer visiter to Ireland and Scotland; but the remarks of several observers seem to prove that these birds are not so numerous now as formerly. They visit Denmark, Sweden, Norway, and

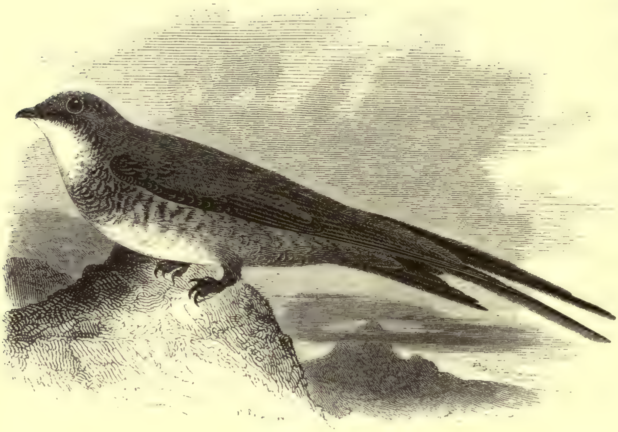
Lapland. In Sweden, Professor Nilsson says this bird builds in hollow trees, even in the woods. From Scandinavia the Swift appears to range as far to the east as Lake Baikal. It is common over the countries of the European continent; and Sir William Jardine includes it among the birds of Madeira. Montagu says it goes as far south in Africa as the Cape; but M. Temminck believes that it does not go beyond the tropics. M. Savi, the ornithologist of Tuscany, says it leaves Italy for Africa about the end of August. It is seen in Sicily, Malta, Corfu, and Crete; and according to Messrs. Dickson and Ross it is abundant at Erzerum from the beginning of May till the end of September. I have never seen our Swift in any collections brought from India.

The beak is black, the mandibles very short, but the gape is wide; irides dark brown; the head, back, the whole of the body and wings, above and below, nearly uniform blackish brown, except a small patch under the chin, which is greyish white; legs, toes, and claws, short and black.

The whole length of the bird to the end of the forked tail, seven inches. From the carpal joint to the end of the wing, which reaches an inch and a quarter beyond the end of the tail, six inches and five-eighths: the second quill-feather the longest in the wing; the first a little longer than the third.

Young birds have the chin white; the tertials, and some of the feathers on the upper surface of the body, tipped with buffy white.

INSESSORES. *HIRUNDINIDÆ.*
FISSIROSTRES.



THE ALPINE SWIFT,

OR THE WHITE-BELLIED SWIFT.

Cypselus alpinus.

Cypselus alpinus,		*Alpine Swift,*	Selby, Brit. Ornith. vol. i. p. 127, note.
,,	,,	,, ,,	Jenyns, Brit. Vert. p. 159.
,,	,,	*White-bellied* ,,	Eyton, Rare Brit. Birds, p. 17.
,,	,,	,, ,,	Gould, Birds of Europe, pt. ii.
,,	,,	*Martinet à ventre blanc,*	Temm. Man. d'Ornith. vol. i. p. 433.

Four examples of the White-bellied Swift are now recorded as having been obtained in the British Islands, and a fifth may be referred to, which was killed a few miles from land off Cape Clear, on the south-west point of the coast of Ireland. The first of the four specimens was shot early in June 1820 by the bailiff of R. Holford, Esq. at Kingsgate in the Isle of Thanet, and this preserved bird being now in the possession of R. B. Hale, Esq. M. P. of

Alderley, to whom I am indebted for the use of a British-killed Bee-eater, as mentioned at page 219, that gentleman has most obligingly allowed me the use of the White-bellied Swift also for this work, and the figure at the head of the last page was drawn from it. The second bird in order of date, was shot near Buckenham Church in Norfolk, on the 13th of October 1831, and is now in the possession of the Rev. Thomas Fulcher, of Old Buckenham, near Attleboro', Norfolk. The third specimen was killed early in March 1833, at Rathfarnham in Ireland, and is preserved in the fine collection of birds belonging to T. W. Warren, Esq. as noticed by Mr. Thompson of Belfast; and the fourth was picked up dead, near Saffron Walden, in Essex, in July 1838, as communicated to me by Joseph Clarke, Esq.

In addition to those above-mentioned, a fine specimen of this bird was killed at Oakingham, on the 8th of October 1841. I saw it before it was skinned, Mr. Gould having brought the bird to London to preserve it for his friend who shot it.

In a recent publication, called, "the Note-book of a Naturalist," it is stated at page 226, that on the 20th of August 1830, a very fine specimen of the White-breasted Swift flew into the room of a friend at Dover, and was secured. The writer erroneously considers that his is the only record of the occurrence of this species in this country.

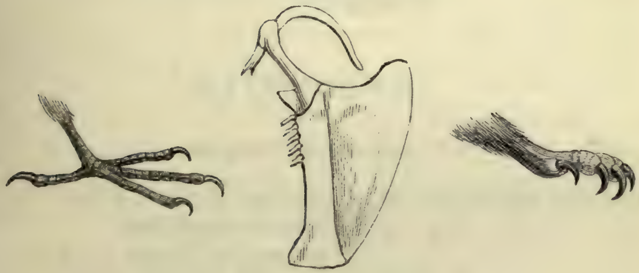
This bird visits the continent of Europe, from Africa, every season, and is found at Gibraltar, in Spain, Provence, France, Switzerland, the Tyrol, Italy, the islands of Sardinia, Sicily, Malta, and those of the Grecian Archipelago. On its arrival, Dr. Latham says, it frequents ponds and marshes for fifteen or twenty days, after which it retires to the mountainous parts to breed. In Spain this bird builds among the high rocks about Aragon. In France, M. Vieillot says, this species only shows itself in the countries bordering on the Alps. It flies with still greater rapidity than the Common Swift, and has in proportion a greater length of wing, feeding almost exclusively on those insects which live in the high regions of air. The bird appears to have the general habits of our Common Swift, from which, however, it is easily recognised, even when on the wing, by its larger size, and its conspicuous white belly. High rocks, and the loftiest parts of cathedrals and church spires, are the places chosen by this bird, in the fissures of which it forms a nest of straw and moss, and these are united by a glutinous matter, which, when dry, makes the nest very hard. M. Vieillot says the nest is small for the size of the bird, and when fixed against a vertical surface is in the form of a half circle. This bird lays four or five elongated white eggs.

The White-bellied Swift annually visits the rocks in the Canton of Geneva; the high steeple at Berne, the cathedral at Fribourg, and other suitable places in the countries already named, and M. Vieillot says it is also found at Constantinople. The *Cypselus Africanus*, or *Le Martinet à gorge blanche* of Le Vaillant's Birds of Africa, is considered to be the same as this White-bellied Swift.

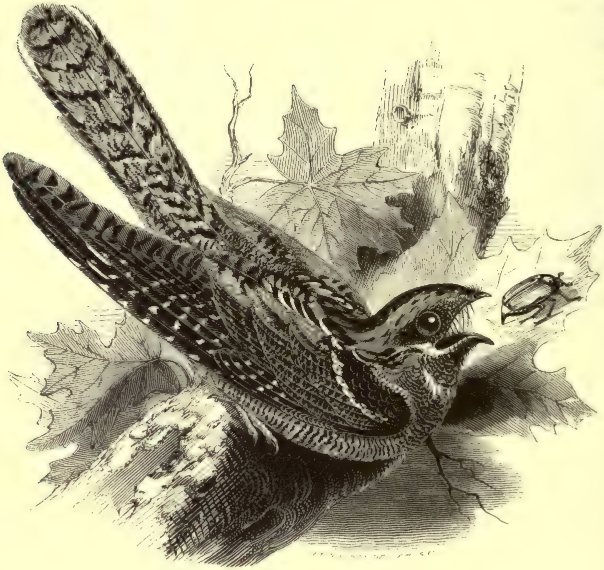
The beak is black, and longer in proportion than in the Common Swift; the irides blackish brown; the top of the head, sides of the neck, and all the upper surface of the body, wings, and tail, nearly uniform hair brown; chin, throat, breast and belly, white; a band across the upper part of the breast; the thighs, vent, and under tail-coverts, hair-brown; feathers on the legs brown; toes orange brown; claws dark brown.

The whole length of the bird from the point of the beak to the end of the feathers of the tail, which are forked and very stiff, is eight inches and three-eighths. From the carpal joint of the wing to the end of the longest feather, eight inches and five-eighths; the wings, when closed, reach two inches beyond the end of the forked tail; the second quill-feather the longest in the wing; the first feather a little longer than the third; the shafts of all black.

The vignette below represents the foot of the Swallow, with the breast-bone and foot of the Swift. In the latter the four toes are all directed forwards. In the breast-bone the depth of the keel, and its consequent large muscles indicate the power of flight.



INSESSORES. *CAPRIMULGIDÆ.*
FISSIROSTRES.



THE NIGHTJAR.

Caprimulgus Europeus.

Caprimulgus	*Europeus,*	*The Nightjar,*	PENN. Brit. Zool. vol. i. p. 566.
"	"	"	MONTAGU, Ornith. Dict.
"	"	"	BEWICK, Brit. Birds, vol. i. p. 312.
"	"	*Nighthawk,*	FLEM. Brit. An. p. 62.
"	"	"	SELBY, Brit. Ornith. vol. i. p. 131.
"	"	*Nightjar,*	JENYNS, Brit. Vert. p. 160.
"	"	"	GOULD, Birds of Europe, pt. xviii.
"	"	*L'Engoulevent ordinaire,*	TEMM. Man. d'Ornith. vol. i. p. 436.

CAPRIMULGUS. *Generic Characters.*—Beak very short, flexible, slightly bent, the gape very wide, upper mandible curved at the point, and furnished with a row of strong hairs, directed forwards along each margin. Nostrils basal, large, partly closed by a membrane, and partly covered by the feathers of the

forehead. Feet with three toes in front, one behind; the anterior toes united as far as the first articulation, the hind toe reversible; the claws short, except that of the middle toe, which is long and serrated on the inner edge. Wings long; the first feather shorter than the second, which is the longest in the wing.

The Nightjar, or Nightchurr, both names having reference to a particular noise made by the bird, which resembles the sound of a spinning-wheel,—is, I believe, the only nocturnal bird among our summer visiters. It has been remarked that the Nightjars are among the Swallows what the Owls are among the *Falconidæ.* These nocturnal, or night Swallows, as they have been sometimes called, do not differ much from the diurnal Swallows, either in their prey, or in the mode of taking it; but their habit of flying and taking their prey on the wing during several hours both in the morning and in the evening, feeding almost entirely on cockchafers and moths, is of great service to the agriculturist by thus consuming the prolific source of innumerable grubs and caterpillars.

The Nightjar, like the Swallow, comes to this country from Africa. It is the latest arrival in order of date, except the Spotted Flycatcher, not making its appearance here till the middle of May, and generally leaves again by the end of August or the middle of September, but remaining near a month later in Italy before it seeks its winter quarters; occasionally, though very rarely, staying much longer here, since Montagu mentions having shot one as late as the 8th of November, 1805, in Devonshire; and Mr. Crouch says that one was shot in Cornwall, as if in departure, November 27, 1821.

The Nightjar appears to prefer moors, heaths, and commons that are partially covered with bushes and patches of fern; I have known them constantly frequent young wood of one or two years' growth, and have observed that if disturbed in such a situation they usually fly to the high wood. If marked into a tree, and approached cautiously, the bird will be seen sitting along a branch of an oak, crouching close down upon it in the line of the limb of the tree, not across it. They appear to be partial to basking on the ground, at the sunny side of a short bush, and if approached they squat close, seldom flying off till they are almost trodden upon, and then start up as if from under your feet. M. Vieillot says they are partial to stony places; and Mr. Dillwyn sends me word that at Penllergare in the dusk of a hot summer's evening he has frequently seen this bird alight in the middle of a road, and fly on when disturbed to a similar dusty spot only a few yards in advance, and the object appeared to be to rub himself like the *Gallinæ* in the dust.

Like some of our twilight flying bats, the Nightjar seems to have a prescribed range over which he constantly seeks his food, passing at almost regular intervals by the same place many times in constant succession. When his haunt and route are once known, it is not difficult to place yourself so as to see him in perfection as he wheels round a favourite tree, and he may generally be heard before he is seen. Wheel-bird, and various other provincial names are bestowed upon it, most of them having reference to the jarring noise which it produces. The authors of the Catalogue of the Birds of Norfolk and Suffolk, printed in the 15th volume of the Transactions of the Linnean Society, say, we have twice seen a Nightjar hawking about in search of food in the middle of the day; and upon one of these occasions the sun was shining very bright; and in the third volume, at page 12, it is stated that this bird was at his feed as late as ten o'clock at night to the annoyance of a practical entomologist, who was out after moths.

That the row of bristles along each edge of the upper mandible of the beak—see vignette,—assists this bird when feeding on the wing, by increasing the means of capture by the mouth, there can be little doubt, but the use of the serrated edge on the inner side of the claw of each middle toe is not so obvious. The middle toe of the Nightjar is particularly long, the claw is flattened and dilated on the inner edge, and the margin is divided so as to form a small comb of seven or eight teeth. The uses to which this little instrument is thought to be subservient are various. White of Selborne, with whom the Nightjar was a favourite, thus writes of it in the commencement of his thirty-seventh letter to his friend Pennant:—"On the twelfth of July, I had a fair opportunity of contemplating the motions of the *Caprimulgus*, or Fern-Owl, as it was playing round a large oak that swarmed with *Scarabæi solstitiales*, or fern-chafers. The powers of its wing were wonderful, exceeding, if possible, the various evolutions and quick turns of the Swallow genus. But the circumstance that pleased me most was, that I saw it distinctly more than once put out its short leg whilst on the wing, and, by a bend of the head, deliver somewhat into its mouth. If it takes any part of its prey with its foot, as I have now the greatest reason to suppose it does these chafers, I no longer wonder at the use of its middle toe, which is curiously furnished with a serrated claw." In Atkinson's compendium of the Ornithology of Great Britain, at page 108, is a note on this subject in corroboration of the view of the use of the serrated claw taken by White. "We have witnessed the singular manner in which this bird takes its prey, consisting of moths and beetles, which it pursues with great agility on the wing, occasionally throwing itself backwards, and thrusting out its foot, with which it seizes and conveys them to its mouth with great deliberation: probably its serrated claw may assist this operation." Other uses have been assigned to this pectinated claw,—namely, to comb out the hairs set along the upper edge of the mouth on each side, or to clear the delicate edges and angles of the mouth from the sharp hooks on the legs of insects, while some have supposed they are supplied to rid the birds of vermin.

The Nightjar makes little or no nest, but under the shelter of a bush takes advantage of any slight depression in the ground, in which she deposits two eggs, which are generally laid during the first week in June. The eggs are nearly oval in form, beautifully clouded and veined with bluish grey on a white ground; the length one inch two lines, by ten lines and a half in breadth. The young are at first covered with down, they are not difficult to rear when taken, and I have known them to be kept through their first winter; but those I have had opportunities of observing never attempted to feed themselves.

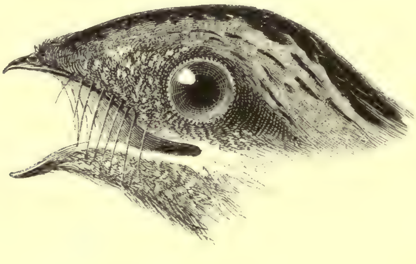
The Nightjar is common in most of the southern counties of England, particularly in Kent, Surrey, Sussex, Hampshire, Wiltshire, Dorsetshire, and westward to Cornwall, especially in all the uninclosed wooded parts of these counties. Its occurrence in South Wales has been already referred to. Mr. Thompson sends me word that it is a constant summer visiter to certain localities in Ireland, and of rare but of occasional occurrence in other parts. It is a common bird in Cumberland and Westmoreland, and according to Mr. Hawkeridge it inhabits the sea coast about Scarborough; and though not uncommon in several parts of Scotland, Mr. Dunn could not hear of it in Orkney, and only saw one example in Shetland, which was considered a very great curiosity. Muller and M. Nilsson include it among the Birds of Denmark and Scandinavia. Pennant, in his Arctic Zoology, says it is common over Siberia and Kampschatska, where it lives not only in forests, but in open countries, finding rocks and high banks for shelter. It is found, as might be expected, over the southern part of the European continent, particularly Spain, coming across to Gibraltar from Tangiers, visits Provence, Italy, and most of the Islands of the Mediterranean, having been observed as far to the eastward as the countries between the Black and the Caspian Seas.

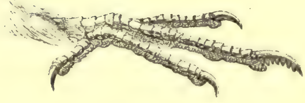
The upper mandible of the beak, extending but little from the forehead, is black, with nine or ten stiff bristles arranged along the edge on each side ; the under mandible also black at the point, but pale brown at the base ; the gape very wide and extending so far backwards as to bring the angle in a vertical line under the posterior edge of the eye : the irides dusky black ; the top of the head is pale greyish brown, produced by dark minute specks on a yellowish white ground ; a dark central stripe of blackish brown feathers passes to the nape of the neck ; the ear-coverts and a patch of feathers on each side behind the ear-coverts are also dark brown, bounded below and behind with pale yellowish brown, thus dividing the freckled grey colour of the head from that of the back, rump, and upper tail-coverts ; the scapularies anteriorly, and on the outer sides, are bounded by dark brown, mixed with some yellow brown ; the anterior part of the wing is also dark brown, bounded posteriorly with lighter brown ; the quill-feathers dark brown, spotted on both webs with yellow brown, and tipped with grey ; the first three primaries on each side, in the male bird, have a well-defined oblong patch of pure white on the inner web ; the middle tail-feathers freckled grey, with seven or eight darker transverse bars ; the two outer feathers on each side are dark brown, barred with yellow brown on both webs, and in the males, these two feathers on each side have broad ends of pure white; all the under surface of the bird, from the chin to the under tail-coverts, is of a pale yellow brown, with numerous transverse bars of darker brown; both sexes with a few white feathers below the angle of the gape on each side; the legs, toes, and claws, orange brown; the middle toe long, and furnished with a comb-like apparatus of seven or eight small teeth on the inner edge of the thin and dilated claw.

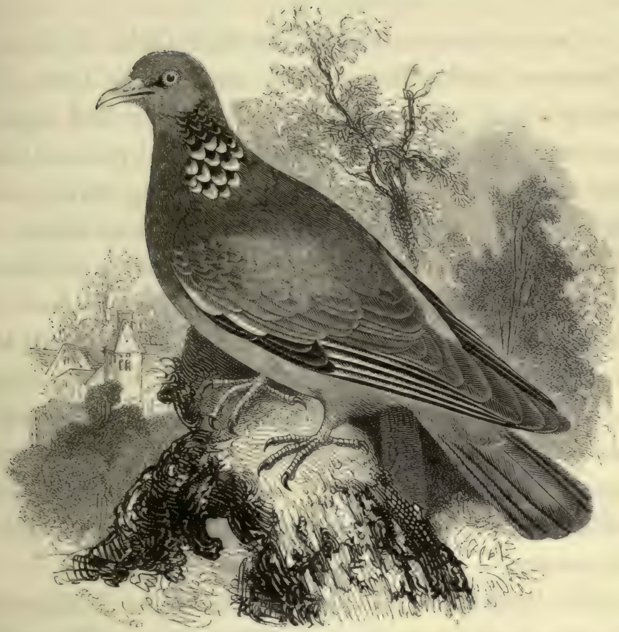
The whole length of the bird ten inches and a half; from the carpal joint to the end of the wing seven inches and three-eighths; the first feather shorter than the third, the second feather a little longer than the third, and the longest in the wing.

The plumage of the male is more ferruginous than that of the female, whose plumage is darker than that of the males, and she has no white spots on the feathers of the wings or of the tail.

The young in their first plumage are like the parents, but the birds of the year before they leave this country are distinguished by their smaller size and shorter tail.







THE RING DOVE, OR WOOD PIGEON.

THE QUEEST, AND THE CUSHAT.

Columba palumbus.

Columba palumbus, Ring Dove,	PENN. Brit. Zool. vol. i. p. 392.
" " " "	MONTAGU, Ornith. Dict.
" " " "	BEWICK, Brit. Birds, vol. i. p. 317.
" " " "	FLEM. Brit. An. p. 47.
" " " "	SELBY, Brit. Ornith. vol. i. p. 406
" " " "	JENYNS, Brit. Vert. p. 161.
" " *Wood Pigeon,*	GOULD, Birds of Europe, pt. viii.
" " *Colombe ramier,*	TEMM. Man. d'Ornith. vol. ii. p. 444.

COLUMBA. *Generic Characters.*—Beak of moderate strength, straight at the base, compressed, the point deflected. Base of the upper mandible covered with a soft skin in which the nostrils are pierced. Feet, three toes in front, entirely divided, one toe behind. Wings of moderate length, rather pointed; the first quill-feather rather shorter than the second, which is the longest in the wing. Tail of twelve feathers nearly even at the end.

We have now arrived at the third Order of Birds, the Rasores of systematic authors: most of the birds of this order obtain the principal part of their food upon the ground. The Pigeons have been placed by some Ornithologists among the Insessores or Perching Birds, and by others among the Rasores or the Gallinaceous Birds. Mr. Thomas Allis of York has shown, in a paper published in the second volume of the Naturalist, page 57, in how many instances some of the Pigeons resemble the Perching Birds, but some of the Pigeons (not of our British species) in their habits and economy, also very closely resemble the Gallinaceous Birds, and the *Columbidæ*, a family very numerous in species, are therefore arranged at one extremity of the Rasores, and immediately in connection with the Insessores.

Our Ring Dove, so called from the white feathers which form a portion of a ring round its neck, a well known bird which is also called a Wood Pigeon in many parts of England, is the largest wild Pigeon in this country, and even in Europe. It is a constant resident in the warm and temperate districts of the Continent, as well as in all the wooded and enclosed parts of the British Islands; but its numbers diminish in the higher northern regions, where this species appear only as visiters during summer.

In this country the Ring Dove, or Wood Pigeon, is also called the Cushat and the Queest:* the last name having reference to a tone of sadness which pervades their notes. Brockett, in his Glossary of North-country words, considers Cushat to be derived from the Saxon *cusceate*, from *cusc*, chaste, in allusion to the conjugal fidelity of the bird; and Mr. Booth in his Analytical Dictionary, says, "Pigeons of all kinds are understood to be particularly faithful in their loves. In courtship they salute with their bills, and murmur, or coo, their notes of pleasure. The male and female sit by turns while hatching, and alternately feed their young. They are not the birds of a busy and turbulent world, they have no gall-bladder, and, therefore, the secretions of the liver are, it is supposed, never converted into black bile: a fluid which has, in all ages, been associated with the irritable passions of mankind. Doves were sacred among the priests of antiquity. They drew the car of the celestial Venus, and were the messengers of the will of the gods. It was a Dove (ever since sacred to peace) that brought the olive branch to the ark of Noah, for which she has her place among the constellations; and the Christian world still personate the Holy Spirit under the mystic emblem of a Dove."

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* Queest, or Quist, forté, a querula voce.—*Nare's Glossary.*

The feeling in favour of Doves and Pigeons in general, receives further confirmation from the habits of the natives of other countries. A writer in the fourth volume of the Naturalist, says, "The Common Pigeon swarms in the city of Petersburg and the country; it is esteemed sacred, and called God's Bird by the Russians, from the circumstance of the Holy Spirit assuming that form when it descended upon our Saviour. To kill and eat it is considered an act of profanation. I had one day an opportunity of observing, myself, how the respect for the Pigeon prevails amongst the lower orders. I shot six, away from a village, at one shot, and brought them home, with the intention of obtaining that master-achievement of modern cookery, a pigeon-pie; when I threw them on the table, a Russian servant who was near, after several ejaculations against my impiety and cruelty, snatched up one of the dead birds, and bursting into tears, commenced kissing and fondling it."

The notes of this Dove may be heard almost incessantly through the months of March and April in most of our thick woods and plantations, particularly those of closely set firs, in which they delight to build; the nest consists of a few sticks laid across, constituting a platform surface, but so thin in substance that the eggs or young may sometimes be distinguished. This structure is usually sixteen or twenty feet above the ground, and sufficiently broad to afford room for both parents and their young. Two eggs are laid, which are oval and white, measuring one inch eight lines in length, by one inch two lines in breadth; these are hatched in sixteen or seventeen days; the young are nourished with food supplied from the crops of the parent birds, who, inserting their own beak between the mandibles of the young bird, thus feed them with a soft and pulpy mass which is already half digested. The old birds produce two and sometimes three broods in the season; and it is a practice among boys, in some countries, when they find a pair of newly hatched birds, too young and small for a prize, to tie each bird by one leg to a branch under the nest, passing the string through the bottom of the nest, and thus endeavour to insure the capture at a future day. The old birds feed during spring and summer on green corn, young clover, grain of all sorts, with peas in particular, and during autumn and winter on acorns, beech-nuts, berries, and turnip leaves. In cold weather they fly in flocks, roosting at night on high trees of ash and oak in thick woods. Ring Doves are in considerable estimation as an article of food, and one of the best modes of obtaining a shot at them is to be in waiting under the trees upon which they come to roost. Ring Doves, like the Pigeons in general, are birds of great power of flight; and this species may be recognized when on the wing almost as far off as any bird I am acquainted with.

Considerable pains have been taken by different individuals to domesticate this species, and the eggs are frequently obtained and placed under other Pigeons; but it generally happens that as soon as the young birds are able to fly, and have learned to feed themselves, they take their departure for more natural haunts.

M. Vieillot says that they have not been able to succeed in France in inducing this bird to breed in confinement, though this secret was known to the ancients. Several persons have failed in this country; but, on the other hand, some have succeeded. Mr. Thomas Allis, of York, has been successful for the two or three last seasons following. These birds have bred in the aviary of the Earl of Derby at Knowsley; and two or three summers since, a pair of these birds in the Dove-house at the Gardens of the Zoological Society in the Regent's Park, built a nest, and produced two eggs; but, unfortunately, during the period of incubation, in which the male assisted, the eggs were broken by some of the numerous other birds, most of them of the same genus, with which they were confined.

This species is found as far south as the latitude of Madeira, and goes eastward to Sicily and Crete, and as far northward in summer as the southern parts of Siberia and Russia. It is found also in summer in Denmark and Sweden, but not in Norway or Lapland.

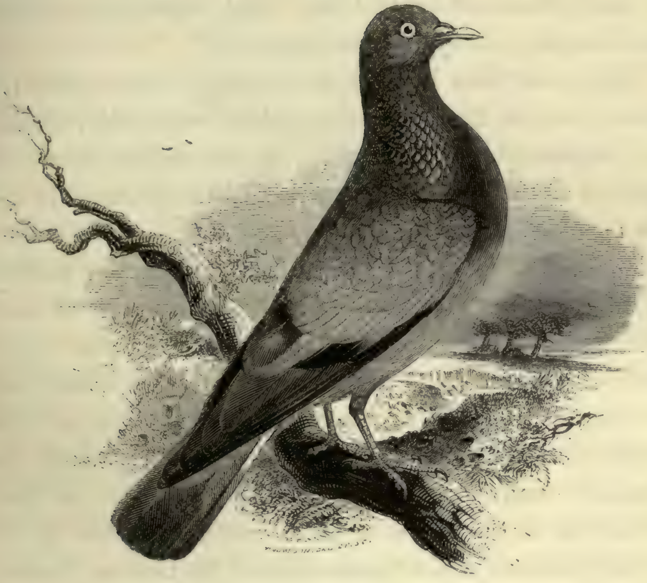
The beak is reddish orange; the soft parts about the nostrils almost white; irides straw yellow; head and upper part of the neck bluish grey; the feathers on the sides of the neck tipped with white, forming parts of four or five oblique rings; back, scapulars, both sets of wing-coverts and the tertials, a shade darker than the head; the four or five first feathers of both sets of wing-coverts white, or partially white, which when the wing is closed produces only a white line down the edge of the wing, but when they are spread open these feathers then form a conspicuous white patch, which is visible at a great distance; the primary quill-feathers are lead grey, with narrow white outer margins and black shafts; rump and upper tail-coverts bluish grey; tail-feathers twelve; the pair in the centre of two colours, the basal two-thirds bluish grey, the ends dark lead grey; the other ten feathers of three shades of grey, of which that in the middle is the lightest in colour, and pearl grey; the chin bluish grey; neck and breast vinous purple red; belly, vent, and under tail-coverts ash grey; under surface of the tail-feathers pearl grey in the middle, lead grey at both ends; legs and toes red; claws brown.

Whole length seventeen inches. From the carpal joint to the end of the wing, ten inches: the first and second quill-feathers very nearly equal in length, and the longest in the wing, from which the others decrease gradually.

The female does not differ much from the male, except that she is a little smaller in size.

Young birds of the year before their first moult have no white on the sides of the neck, and the general colour of the plumage is less pure and glossy. Varieties, spotted over the body with white, are not uncommon, and are generally very handsome birds.

RASORES. *COLUMBIDÆ.*



THE STOCK DOVE.

Columba ænas.

Columba ænas, *Stock Dove*, Penn. Brit. Zool. vol. i. p. 390.
" " " " Selby, Brit. Ornith. vol. i. p. 408.
" " " " Jenyns, Brit. Vert. p. 161.
" " " " Gould, Birds of Europe, pt. v.
" " *Colombe columbin*, Temm. Man. d'Ornith. vol. ii. p. 445.

Montagu appears to have considered the Rock Dove and the Stock Dove but as one species, applying the trivial name *ænas* to the Rock Dove, which is truly described, and giving no description of the Stock Dove. Bewick has figured the Rock Dove under the specific name of *ænas*, and remarks that the Stock Dove, Rock Pigeon, and Wood Pigeon, with some small differences, may be included under the same denomination. Dr. Fleming has also called his Rock Dove *C. œnas*, considering them but one species, and I have, therefore, omitted the usual references to these works among the synonymes altogether.

The Stock Dove is, however, perfectly distinct from the Rock Dove, as its localities, its habits, voice, and plumage, will sufficiently demonstrate. It was called *œnas* * on account of the vinous claret colour of the plumage of the neck; and Stock Dove, not because it was by some considered to be the origin of our domestic stock, but because it builds in the stocks of trees, particularly such as have been headed down, and have become in consequence rugged and bushy at the top. In the open countries of Suffolk and Norfolk, this species frequently makes its nest in holes in the ground, generally selecting a rabbit's burrow for the purpose; and Messrs. Sheppard and Whitear, in their Catalogue of the Birds of those counties, printed in the fifteenth volume of the Transactions of the Linnean Society, mention, "that when the warreners find the young in a burrow, they fix sticks at the mouth of the hole in such a manner as to prevent the escape of the young, but to allow the old birds to feed them; and when they are in good condition they are taken for the table." Mr. Leathes says, "it breeds in old trees near the decoy at Herringfleet." Mr. Salmon, in his notice of Norfolk birds, says, "the Stock Dove occupies the deserted rabbit burrows upon warrens, it places its pair of eggs about a yard from the entrance, generally upon the bare sand, sometimes using a small quantity of dried roots, &c., barely sufficient to keep the eggs from the ground; besides such situations on the heaths, it nestles under thick furze bushes, which are impervious to rain in consequence of the sheep and rabbits eating off the young and tender shoots as they grow, the birds always preferring those bushes that have a small opening made by the rabbits near the ground ; a few pairs occasionally breed in the holes of decayed trees ; but this is of rare occurrence in this district. It generally commences breeding by the end of March, or the beginning of April ; the young ones, which are very much esteemed, being ready for the table by the commencement of June." Mr. Salmon also mentions his having known this bird to make its nest high up in a fir tree, like the Ring Dove, last described ; they also roost in trees, which the Rock and Domestic Pigeons never do, and unless under very particular circumstances very seldom even settle in a tree at all. Mr. Selby says the Stock Dove in its habits resembles the Ring Dove, and is an inhabitant of woods, breeding in the hollows of old and pollard trees. Mr. Jenyns says the Stock Dove inhabits woods with the Ring Dove, but is less plentiful and more local. Not uncommon in some of the midland and eastern counties, where it remains the whole year. Builds in the hollows of pollard trees, and lays two eggs. Does not coo like the Ring Dove, but utters a hollow rumbling note, heard at intervals throughout the spring and summer months. Flocks with the Ring Dove in winter, and supports itself in the same manner.

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* *Œnas* from *oinos*, *vinum*, *vinago*, a name given to this bird by Ray.

Mr. Blyth says the Stock Dove is rather a rare species in the south of England, and has a disagreeable grunting note very different from the musical coo of the Cushat, and equally unlike that of the Rock or dovecot species. Mr. Jesse, in the last edition of his Gleanings, 1838, vol. ii. p. 256, mentions that some pairs of Stock-pigeons, *Columba œnas*, build every year in the holes of the old oak pollards in Richmond Park. The keepers take the young, which they say are excellent eating. The eggs are oval and white, measuring one inch six lines and a half in length, and one inch two lines in breadth. The food of this species is very similar to that of the Ring Dove,—namely, young green leaves, peas, grain, seeds, berries, turnip leaves, beech nuts, acorns, &c., according to the season of the year.

The young of the Stock Dove are frequently sent to the London market, and sold to the poulterers, and I have this day, January 4, 1840, bought two old birds which have also been sent up to market for sale; these came packed with some Ring Doves, and appear to have been shot with them.

Columba œnas is, in truth, a southern species. According to Sir William Jardine, Mr. Macgillivray, and other authorities, it is not found in Scotland, in the Hebrides, in Orkney, or in Shetland, where the Rock Dove is common on most of the high cliffs and promontories at the sea side which have caves or fissures. When the Stock Dove does go northward, it is only as a summer visiter. M. Nilsson includes it among the birds of Sweden, and has given an excellent figure of it in the coloured illustrations of his Scandinavian Fauna. In that country, where the Rock Dove is also found, the Stock Dove builds in holes of trees, and departs southward in autumn with the Ring Dove. M. Vieillot says it is only a summer visiter to Germany and France, and always found to inhabit woods in the interior of each country. It is found in Provence and the eastern part of Spain. It is abundant in Italy during September, October, and November, then frequently going farther south. It is included among the Birds of Madeira. It is found in Corfu, Sicily and Malta, going from thence in autumn to Algeria. Mr. Selby and M. Temminck consider it as widely diffused in North Africa, but not going southward of the tropic; and the Zoological Society have recently received specimens from Erzeroom, which agree exactly with our British examples; Messrs. Dickson and Ross, from whom they were received, remarking in their notes of communication, published in the Society's Proceedings, that it is common in that locality.

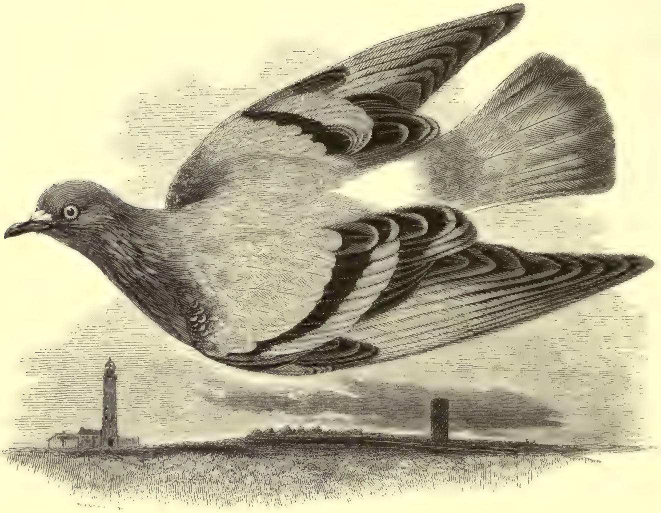
The beak is reddish orange; the irides scarlet; head, neck, back, scapulars, and both sets of wing-coverts, bluish grey; primary quill-feathers lead grey, the external margin lighter; the secondaries pearl grey at the base of the outer web, the ends lead grey; the tertials bluish grey, the last three with a single lead grey spot on the outer web, sometimes a similar spot on the wing-covert feather above; but these spots do not form a band in any position of the wing; rump and upper tail-coverts French-grey; tail-feathers twelve, the basal two-thirds bluish grey, then a narrow band of lighter grey, the ends lead grey; the basal portion of the outer web of the outside tail-feather on each side almost white; chin bluish grey; sides of the neck glossy with green reflections; breast purple red; belly, flanks, vent, under wing and under tail-coverts French-grey; legs and toes red; claws brown.

Whole length of a female thirteen inches. From the carpal joint to the end of the wing, eight inches and three-eighths; the first and fourth quill-feathers nearly equal in length, and a little shorter than the second and third, which are also nearly equal, and the longest in the wing.

The male and female differ but little in plumage; but the male is the larger bird, and his colours are more brilliant.

Young birds before their first moult have no shining metallic feathers in the neck, and they are also without any spots on the last tertial feathers of the wing, or on the wing covert above.

RASORES. *COLUMBIDÆ.*



THE ROCK DOVE.

Columba livia.

Columba livia,	*Rock Dove,*	SELBY, Brit. Ornith. vol. i. p. 410.
" "	" "	JENYNS, Brit. Vert. p. 162.
" "	" "	GOULD, Birds of Europe, pt. x.
" "	*Colombe biset,*	TEMM. Man. d'Ornith. vol. i. p. 446.

As it is not intended to include in this work either figures or lengthened descriptions of those birds which exist in this country only in a domesticated state, I do not refer to the *Columba domestica* of Pennant's Zoology, vol. i. page 383, by including it among the synonymes, and reasons were given under the head of Stock Dove for omitting also the references in this instance to the works of Montagu, Bewick, and Dr. Fleming.

The Rock Dove, as its name implies, is a species which in its natural and wild state inhabits high rocks near the sea-coast, in the cavities of which it lives the greater part of the year, only venturing during summer as far inland as may be necessary to visit the nearest cornfields, or other places, from which it can obtain its food. The Rock Dove, as a species distinct from the Stock Dove, was called *Columba livia*, on account of its lighter or more livid blue colour ; the pure white on the lower part of the back ; the two conspicuous black bars across the wings ; the voice, in conjunction with the habits, so opposite to those of the Stock Dove, are sufficient proofs of distinction, and accordingly the Rock Dove is not only admitted as a good species, but from several other circumstances there appears to be no reason to doubt that the Rock Dove is also the species from which our Domestic Pigeons were originally derived.

This bird has a very extensive geographical range, being found as far north as the Faroe Islands, and southward at Teneriffe, Madeira, over North Africa, inhabiting most of the rocky islands in the Mediterranean, and eastwards as far as Greece. In our own country it is not only found on some of the high cliffs of our southern coast, but, according to Sir William Jardine and Mr. Selby, it is found in various parts both of the east and west coasts of Scotland. The specimen from which the figure here engraved was taken, was given me by John Malcolm, Esq., who brought it, with some others, from Scotland. Mr. Macgillivray has recorded that he found it in quantities inhabiting the rocks and promontories of the Hebrides. The Rev. Mr. Low and Mr. Salmon include it among the birds of Orkney, where, the latter gentleman observes that it is very numerous, breeding in the crevices of the rocks, but the nests are placed at such a depth that it is impossible to reach them.

Mr. Dunn says there are considerable numbers in the Shetland Isles, where they breed in the rocks and deep subterranean caverns, the mouths of which open to the sea, and to which they constantly repair during the night. In the day they fly about in large flocks, searching for food, and when not engaged in feeding, their favourite resort appeared to be such portions of the high precipices as were covered with soft grass. It has also been observed of Shetland, that those islands which produced the most corn had the greatest number of Rock Doves. Their food consists principally of grain and seeds: Colonel Montagu ascertained that they eat considerable numbers of the *Helix virgata;* and Mr. Macgillivray says they pick up several species of shell-snails, especially *Helix ericitorum* and *Bulimus acutus.* The Pigeon's mode of drinking is by a continued draught, and not by sipping, as practised by most other birds.

The Rock Dove produces two pairs of young in the season, each pair generally consisting of a male and female bird: the eggs are white, of a short oval shape, rather pointed at one end, measuring one inch five lines in length, by one inch two lines and a half in breadth.

The extreme southern localities of this species have been already alluded to. North of Shetland it is found in Denmark, Sweden, Norway, and as far as the Faroe Islands. Pennant, in his Arctic Zoology, says, that this bird goes as far east as Lake Baikal, and M. Temminck mentions that skins received from Japan do not differ in any respect from those of Europe or of Africa.

A reference to our Domestic Pigeons, and to some of the varieties, rendered permanent by restriction, will follow the description of the Wild Rock Dove.

The beak reddish orange, inclining to brown; irides pale orange; head and neck bluish grey, the sides of the latter shining with green and purple reflections; shoulders, upper part of the back, and both sets of wing-coverts, french-grey; all the greater coverts with a black bar near the end, forming a conspicuous black band, extending outwards and forwards to the edge of the wing; primary and secondary quill-feathers bluish-grey; the tertials french-grey, tipped with black, and with a conspicuous band of black below the black band on the coverts, the light-coloured band of the great wing-coverts intervening between the two dark bands; lower part of the back pure white; rump and upper tail-coverts pearl-grey; tail-feathers twelve, of two colours, the basal two-thirds pearl-grey with dark shafts, the ends lead grey; the chin bluish grey; the throat purple and green; breast and all the under surface of the body pearl grey; under wing-coverts and axillary plume white; legs and toes reddish orange; the claws brown.

The whole length of the bird eleven inches and a half. From the carpal joint to the end of the wing eight inches: the first quill-feather considerably longer than the fourth, but a little shorter than the second and third, which are nearly equal in length, and the longest in the wing.

The females are not quite so large as males, and their colours generally less brilliant. Young birds in their first or nestling plumage, before their autumnal moult, may always be distinguished from the young of the Stock Dove by the broad patch of pure white on the lower part of the back.

Of the Rock Dove, and its descendants, among our Dove house-pigeons, it is remarked, that they very seldom or ever roost on trees, or even settle in them, unless wounded by shot, or under peculiar circumstances, such as mentioned by Mr. Eyton in the account of the Stock Dove in his work on the Rarer British Birds. The Stock Dove, on the contrary, roosts and lives almost exclusively in the woods, and the other distinctions of voice and plumage have been already pointed out. Our Dove house-pigeons possess great power of vision, as well as speed and duration of flight. Dr. Jenner says, "my ingenious friend and neighbour, the late Rev. Nathaniel Thornbury, who had occasionally visited Holland, informed me that the Pigeons about the Hague make daily marauding excursions, at certain seasons, to the opposite shore of Norfolk, to feed on vetches, a distance of forty leagues." Domestic Pigeons have been known to live twenty years; but ten or twelve years are more common, and they are not usually very prolific after five years.

One of the first consequences of domestication, it is well known, is the production of various colours, generally, however, retaining some indication of the original race, or reproducing some of the original traits, if selection be not attended to. The numerous and remarkable varieties among what are called Fancy Pigeons, however first established, are now maintained and perpetuated by selection and restriction, and some of them are among the most curious of zoological results. In some instances a remarkable change has been effected in the character of the feather; thus in the Jacobins, more frequently for brevity's sake called Jacks, there is a range of feathers inverted quite over the hinder part of the head, and reaching down on each side of the neck as low as the wings, forming a hood. Another change, equally extraordinary, has been effected in that variety called the Broad-tailed Shakers; the tail-feathers in these birds, all beautifully spread, amount to thirty-six, though the normal number of true tail-feathers is but twelve.

The changes, however, in some fancy Pigeons are not confined to the feathers, but modifications in form are effected even in the bones. A comparison of the Short-faced Tumbler and the Carrier exhibits the first named with a very small round head, and a short, straight, conical beak, not more than half an inch in length, while the beak of the Carrier Pigeon measures an inch and a half in length, with a proportionally elongated head. The properties of the Carrier Pigeons, and some allied varieties, have also excited considerable interest from the certainty with which they find the place where they were bred, and that, in some cases, from an almost increbible distance. When, however, the training these birds undergo is explained, the experience thereby attained, their powers of vision uninterrupted from the elevation they take, and some recollection of prominent objects with their bearing upon the locality of the desired point, the difficulty is greatly diminished. These birds are

generally bred in lofts at the top of the house, from whence, when able, the young birds accompany their parents in their daily excursions around, and thus learn to distinguish their own roof from any other. The further directions are thus given in a work on Fancy Pigeons:—

"In order to train a Pigeon for this purpose, take a strong, fully-fledged, young Carrier, and convey it in a basket or bag, about half a mile from home, and there turn it loose; having repeated this two or three times, then take it two, four, eight, ten, or twelve miles, and so on, till they will return from the most remote parts of the kingdom; for if they are not practised when young, the best of them will fly but insecurely, and stand a great chance of being lost. Be careful that the Pigeon intended to be flown is kept in the dark, and without food, for about eight hours before it is let loose, when it will immediately rise, and flying round, as is their custom, will continue on the wing till it has reached its home."

The spiral flight, when first let loose, is a flight of observation, from which, as soon as the bird has reached sufficient elevation, and gained the sight of a known object, he goes off in a direct line to his point. Should fog or haze occur the bird would probably be lost.

Examples of power and speed are thus recorded:—In July 1808, a wager was decided by setting off three Pigeons, belonging to a young man named Wilson, in the Borough, who undertook that they would fly thirty-five miles in one hour. They were accordingly sent off the same evening at five o'clock, five miles beyond Tunbridge Wells, and arrived at the residence of their owner in the short space of fifty-three minutes, being seven minutes within the time allowed. A gentleman having a wager depending on the event, sent a Pigeon by the stage coach to his friend at Bury St. Edmonds, with a note requesting that the bird, two days after his arrival there, might be thrown up precisely when the town clock struck nine in the morning, which was accordingly done, and the Pigeon flew into the loft of the Bull Inn, Bishopsgate Street, London, and was there shown at half past eleven o'clock the same morning, having flown seventy-two miles in two hours and a half. The fact was confirmed by a letter sent by post from the person at Bury St. Edmonds.

A society of Pigeon-fanciers at Ghent give an annual prize for the best Carrier Pigeon. In 1833 this prize was decided on the 24th of June, when twenty-four birds were sent off from Rouen, whither they had been conveyed from Ghent. The distance in a direct line is about one hundred and fifty miles. They were started at Rouen at fifty-five minutes after nine o'clock in the morning. The first which arrived at Ghent had made the transit in an hour and a half; sixteen arrived in two hours and a half; three in the course of the day, and four were lost.

On the 27th day of June 1819, some sporting amateurs of Antwerp sent thirty-two Carrier Pigeons to London, where they arrived on the 10th of July following, at four o'clock in the afternoon, each of them having a mark on both wings. In the evening they were countermarked, London. The next morning, Sunday, July 11th, they were thrown up on Tower Hill, precisely at a quarter before seven o'clock, viz.: six by Mr. George Babington; eight by Mr. J. F. Sells; six by Mr. Jacobs, of the firm of Messrs. F. Deckers, & Co., to whose care the birds were consigned; the other twelve by the two men who brought them from Antwerp, viâ Calais.

Fourteen of the thirty-two were lost; eighteen arrived at their respective owners in the following order:

1 at 12 o'clock the same day, Sunday, July 11th.
1 at a quarter past 12 . " " "
1 at half-past 12 . . " " "
2 at 4 o'clock in the afternoon " " "
1 at 5 in the afternoon . . " " "
1 at 7 in the afternoon . " " "

7 came in the same day, the first performing the distance, estimated at about 240 miles, in 5 hours.
1 came in at half-past 5 in the morning of July 12th.
1 at 6 in the evening . . . " "
3 at 7 in the evening . . " "
2 at 9 in the evening . . " "
1 at 11 in the morning of . . " 18th.
1 at 10 in the morning of . . " 19th.
1 at 4 in the afternoon of . . " 21st.
1 at 7 in the evening of . . " "

18 Arrived
14 Were lost.

32

A pair of these Pigeons were sent from Antwerp to Sir John Sebright at Beechwood; they were confined for TWO YEARS in a room from which they could not see the horizon, and produced several young ones. The male died, and the female was then put into a place with other Pigeons, from which she disappeared, and Sir John received a letter from Antwerp to say that she had returned there.

This power has, by an interchange of birds, been made available both in war and in commerce.

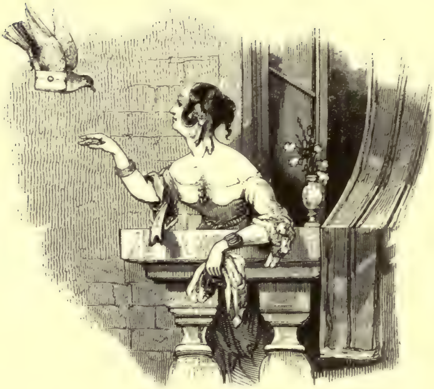
In reference to the mode of marking these valuable Pigeons, I copy the following from the 25th Number of the Zoologist. About the beginning of August 1844, a fisher boy was rambling about Spern Head, and discovered a Pigeon resting on the top of the house of one of the seamen that manned the life-boat. He procured a gun and killed it. When plucking off the feathers, he observed one which attracted his notice, and kept it on account of its beauty. The bird was a Carrier Pigeon, and had been sent from

Hamburgh; and on this feather (the fourth of the wing,) was a drawing of exquisite design and execution. The ground colour of the feather was of a light dove, the figures being wrought in black. In the centre of a ring were two doves, each holding a letter, and near it the initials of the owner, and the number 119, round which was a motto in German. The whole drawing occupied a space of about an inch square. This feather is still preserved at Spern Head as a great curiosity.

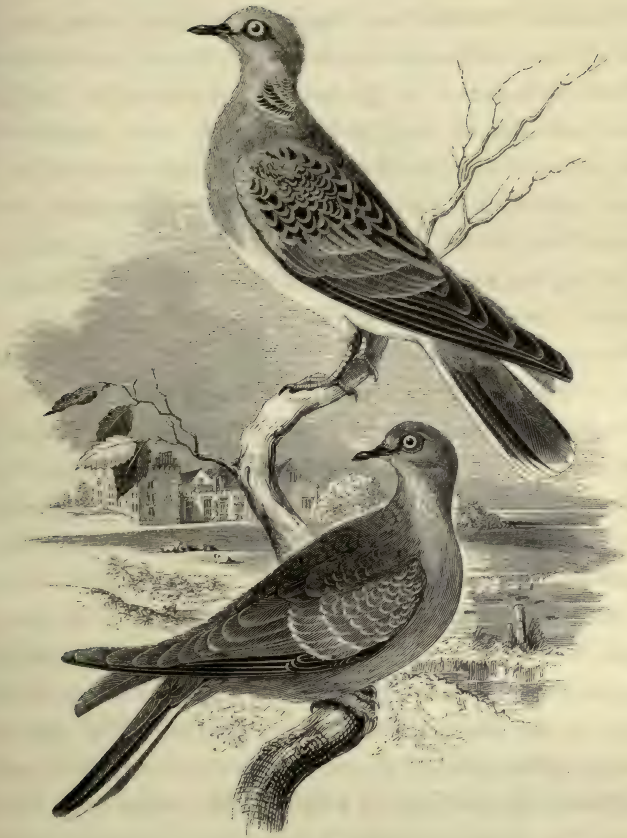
In Captain Carleton's memoirs there is a description of the Naval Battle of Solebay, fought on the 28th of May 1672. The following extract in reference to Pigeons kept on board of ship, is not without interest. "I cannot here omit one thing, which to some may seem trifling, though I am apt to think our naturalists may have a different opinion of it, and find it afford their fancies no undiverting employment in more curious and less perilous reflections. We had on board the London, where, as I have said I was a volunteer, a great number of Pigeons, of which our commander was very fond. These, on the first firing of our cannon, dispersed, and flew away, and were seen nowhere near us during the fight. The next day it blew a brisk gale, and drove our fleet some leagues to the southward of the place where they forsook our ship, yet the day after they all returned safe on board; not in one flock, but in small parties of four or five at a time. Some persons at that time on board the ship, admiring at the manner of their return, and speaking of it with some surprise, Sir Edward Sprage told them, that he brought those Pigeons with him from the Streigths; and that when pursuant to his orders he left the Revenge man-of-war to go on board the London, all those Pigeons, of their own accord, and without the trouble or care of carrying, left the

Revenge likewise, and removed with the sailors on board the London, where I saw them: all which many of the sailors confirmed to me. What sort of instinct this could proceed from I leave to the curious."

The vignette represents an employment quite in character with so gentle a messenger.



RASORES. *COLUMBIDÆ.*



THE TURTLE DOVE.

Columba turtur.

Columba	*turtur,*	*The Turtle,*		Penn. Brit. Zool. vol. i. p. 394.
„	„	„	*Dove,*	Montagu, Ornith. Dict.
„	„	„	„	Bewick, Brit. Birds, vol. i. p. 322.
„	„	„	„	Flem. Brit. An. p. 47.
„	„	„	„	Selby, Brit. Ornith. vol. i. p. 413.
„	„	„	„	Jenyns, Brit. Vert. p. 162.
„	„	„	„	Gould, Birds of Europe, pt. ii.
„	„	*Colombe turturelle,*		Temm. Man. d'Ornith. vol. ii. p. 448.

The Turtle Dove is only a summer visiter here, and like most of our summer visiters comes to this country from Africa, and returns there again before winter, not remaining even in the Italian states beyond the middle of autumn. These birds arrive in England about the end of April, or the beginning of May, and are rather more numerous in the south-eastern, southern, and midland counties than in those which are farther north. Their appearance is observed and hailed with pleasure each returning spring, as denoting the season of buds and flowers, and as emblems of serenity and peace their mournfully plaintive notes give pleasure. Sportsmen speak of a flight of Pigeons, but they say also a dule of Turtles, from *doleo*, the term in this instance, as in that before mentioned at page 278, having reference to the particular character of the voice of the bird. They frequent woods, fir plantations, and high thick hedges dividing arable land. They make a thin, almost transparent platform nest, eight or ten feet above the ground in the forked branch of an oak, on a fir tree, or near the top of a thick and tall bush. Upon this nest the female deposits two eggs about the middle of June, according to the observations of Mr. Jenyns. The eggs are white, rather pointed at one end, one inch two lines and a half long, by ten lines in width. The parent birds sit by turns, the male occasionally also feeding his mate during incubation, and both afterwards mutually labouring for the support of the young. In this country they are considered as producing but one brood in the season, but in the South of France these birds are known to have a second pair of young. Their food is grain, particularly wheat, and they are constant visiters to the wheat-field while the corn is growing, and to pea-fields: they also feed on rape, and other small seeds. In the autumn they fly in small parties of ten or twelve birds, and leave this country about the end of August, and sometimes as late as the end of September, particularly in those seasons when our harvest is backward. I have several times killed both adult birds and the young of the year when out Partridge shooting in Hertfordshire; but I have observed that these birds are more numerous in the thickly-wooded parts of the middle of the county of Kent than elsewhere.

In the western counties, the Turtle Dove is found in Dorsetshire, Devonshire, and is not uncommon in Cornwall. Mr. Eyton says it is found in Shropshire, where it is called the Wrekin Dove. It is found in Lancashire; and is mentioned as visiting Cumberland both by Mr. Heysham and Mr. Sanderson. In Ireland, Mr. Templeton says this species has been seen at Cranmore and at Shane's Castle. Sir William Jardine sends me word that he once shot this bird in the garden of Jardine Hall in Dumfriesshire, and in the eighth volume of the Magazine of Natural History there is a notice of a specimen of the Turtle Dove having been shot in Perthshire in 1834, so late in the year as the 20th of October. On the eastern side of England it is common in Essex, Suffolk, and Norfolk. The Rev. Richard Lubbock, who has favoured me with many notes in reference to Birds and Fishes, tells me that the Turtle Dove builds frequently in fir plantations in various parts of Norfolk; is content to place its nest much nearer the ground, and in a much smaller tree than the Ring Dove affects; and mentions that he has observed it breeding within half a mile of the city of Norwich. This bird has been taken near Scarborough, and also near York; and Bewick mentions that a young bird was shot out of a flock at Prestwick Car in Northumberland, in the month of September 1794. I do not find any notice of the Turtle Dove visiting any part of Scandinavia or Russia. It is common in Germany in summer, and from thence southward to the shores and islands of the Mediterranean, going still farther south before the end of autumn. Mr. Fellows has included this bird among those seen by him in Asia Minor in 1838; and Mr. H. Strickland saw it at Smyrna in the month of April 1836.

The adult male in summer has the beak brown; the irides reddish brown; under the eye a small patch of naked red skin; top of the head bluish ash, inclining to brown on the back of the neck; on the lower part of the side of the neck are four rows of black feathers, tipped with white, forming four oblique bars; scapulars, back, and rump, pale brocoli brown, the centre of each feather still darker; both sets of wing-coverts clove brown, broadly margined with bright red brown; the most external smaller wing-coverts bluish grey; quill-feathers brocoli brown; upper tail-coverts, and the two central tail-feathers, clove brown; the other tail-feathers darker brown, tipped with white; the outer tail-feather on each side, with the outer web, also white; chin, neck, and breast, pale wood brown, with a vinous tint over the latter; belly, vent, and under tail-coverts white; under surface of the tail-feathers blackish brown, tipped with white, as on the upper surface: under wing-coverts and sides of the body bluish grey; legs and toes yellow brown; claws darker brown.

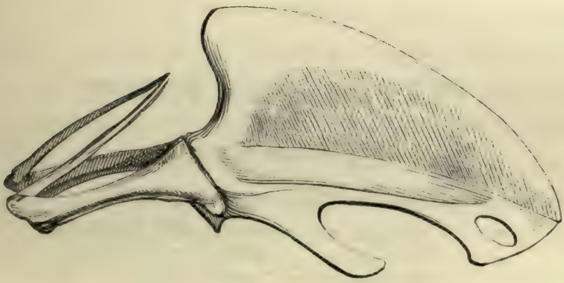
Whole length eleven inches and a half. From the carpal joint to the end of the wing, six inches and three-quarters: the first and second quill-feathers rather longer than the third, and the longest in the wing.

The colours in the female are less bright and pure than those of the male, and she is rather smaller in size.

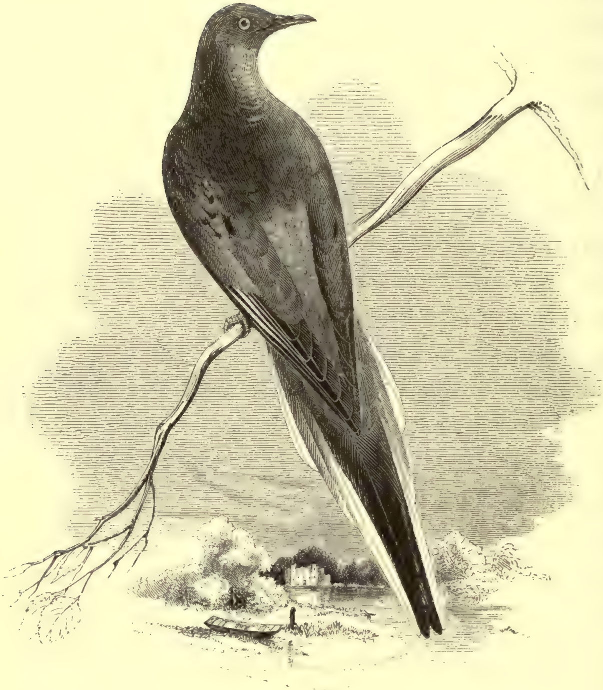
Young birds of the year up to the time of leaving this country have the beak dark brown; the general colour of the plumage of the head and body hair brown; the back rather darker than the front of the neck; the wing-coverts tipped with buffy white; the flight, or quill-feathers, slightly tinged on their outer edges with rufous; belly and under tail-coverts white; flanks bluish grey; tail-feathers above hair brown, on the under surface blackish brown; the outer feathers on each side with the external web, and the next two with the ends, white; legs, toes, and claws, brown.

The upper figure in the engraving at the head of this subject represents an adult bird; the lower figure was taken from a young bird of the year.

The vignette represents in outline the form of the breastbone of our Turtle Dove of the natural size, and indicates by the depth of the keel the great powers of flight possessed by the birds of this genus.



RASORES. *COLUMBIDÆ.*



THE PASSENGER PIGEON.

Ectopistes migratorius.

Columba migratoria,	*Passenger Pigeon,*	Flem. Brit. An. p. 145.
" "	" "	Jenyns, Brit. Vert. p. 163.
" "	*Migratory* "	Eyton, Rare Brit. Birds, p. 30.
" "	*Columbe voyageuse,*	Temm. Suppl. Man. d'Ornith. pt. iv. p. 309.
Ectopistes migratorius,	*Passenger Turtle,*	Selby, Nat. Lib. Ornith. vol. v. p. 177.

Ectopistes. *Generic Characters.*— Bill slender, notched. Wings rather elongated, pointed; the first and third quill-feather equal, the second longest. Tail rounded, or cuneated. Feet short, naked: anterior scales of the tarsi imbricate; lateral scales very small, reticulate.

The genus Ectopistes, the characters of which were first published in the third volume of the Zoological Journal, page 362, was instituted by Mr. Swainson, for the reception of the *Columba migratoria*, and *Columba Carolinensis* of authors, birds which, Mr. Selby observes in the volume quoted, " though nearly allied in other characters, are distinguished from the rest of the Turtles by the greater length of their wings and tail, those essential organs of motion, the extra developement of which necessarily indicates an economy and mode of life different from that of those species where these members are comparatively short, and differently proportioned."

This beautiful Pigeon is a native of North America, over nearly the whole of which immense continent it occasionally rambles, the country to the west of the Rocky Mountains only excepted. According to Mr. Hutchins, they abound in the country round Hudson's Bay, where they usually remain as late as December, feeding, when the ground is covered with snow, on the buds of juniper. Dr. Richardson says this celebrated bird arrives in the fur-countries in the latter end of May, and departs in October. It annually attains the sixty-second degree of latitude in the warmer central districts, but reaches the fifty-eighth parallel on the coast of Hudson's Bay in very fine summers only. Mr. Hutchins mentions a flock of these Pigeons visiting and staying two days at York Factory in 1775, as a remarkable occurrence. Wilson says they spread over the whole of Canada ; were seen by Captain Lewis and his companions near the great falls of the Missouri, upwards of two thousand five hundred miles from its mouth, reckoning the meanderings of the river ; were also met with in the interior of Louisiana by Colonel Pike ; and extend their range as far south as the Gulf of Mexico, occasionally visiting or breeding in almost every quarter of the United States.

Captain James Ross, in the Natural History portion of the Appendix to the Narrative of the second voyage by Sir John Ross, says of this Pigeon,—"A young male bird flew on board the Victory during a storm, whilst crossing Baffin's Bay in latitude 73½ N. on the 31st of July, 1829. It has never before been seen beyond the sixty-second degree of north latitude; and the circumstance of our having met with it so far to the northward, is a singular and interesting fact." Dr. Richardson, in the Appendix to Captain Back's Narrative, referring to this occurrence of the Passenger Pigeon, remarks, "that it flew on board the Victory during a storm, and must have strayed from a great distance. The wind, as we find by a reference to Sir John Ross's Narrative, blew from the north-east at the beginning of the gale, shifting afterwards to the eastward. As the Victory was to the northward of the island of Disco at the time, if the bird came in either of these directions, it must have taken flight from the northern part of Greenland, but it is not likely to have found food on that barren coast." M. Temminck, in the recently published fourth part of his Manual of Birds found in Europe, says, this bird has been taken both in Norway and in Russia. Dr. Fleming, in his History of British Animals, page 145, says, "I have to add the occurrence of a single individual, of a species hitherto unknown, even as a straggler, the Passenger Pigeon, *Columba migratoria.* It was shot, while perched on a wall in the neighbourhood of a pigeon-house, at Westhall, in the parish of Monymeal, Fifeshire, the 31st of December, 1825. The feathers were quite fresh and entire, like those of a wild bird." This species is therefore included in this History of British Birds.

Since the publication of the preceding notice, another example of this species has been killed near Royston in Hertfordshire, which being sent, as in the case of the Rock Thrush, to Mr. John Norman for preservation, I received the following notice of the occurrence from my young friend Mr. Hale Wortham. This bird was obtained between Royston and Chishill, early in the month of July 1844, by the sons of the tenant of the farm called Known's Folly, about two miles east of Royston. When the lads first saw the bird it appeared so much exhausted they could have knocked it down with a pole, if they had had one, they however fetched a gun and shot it. When examined the crop was quite empty, but in the stomach there were some few seeds, resembling cole-seed, and a few small stones, but no barley, or any traces of artificial food. The plumage was perfect, and neither the wings, the tail, or the legs, exhibited any sign that the bird had been in confinement. I have learned by a communication from the Rev. Mr. Williams, who is well acquainted with birds, that he saw a Passenger Pigeon in a wood near Tring, also in Hertfordshire, though on the other side of the county; but this covert being strictly watched, as a preserve for Pheasants, the use of a gun, and the requisite search, were not permitted.

For long and particular accounts of the vast numbers and extraordinary habits of this migratory or Passenger Pigeon in America, I must refer to the ornithological histories of Wilson and Audubon. Like other Pigeons, it makes a slender platform nest; but, unlike other Pigeons, it lays but one egg. The following is an extract from the published Proceedings of the Zoological Society for the year 1833, page 10. A note by James Hunt, one of the Society's keepers was read. It related to the breeding of the

Passenger Pigeon, *Ectopistes migratorius* (Swains,) in the Society's menagerie. A pair of these birds began to build their nest on the 25th of April, 1832, having been three or four days in selecting a proper place in a fir-tree in the inclosure appropriated at the Gardens to the Pigeons. The female was the nest-builder. The male bird performed the most laborious part of the work: he collected and conveyed to the spot all the materials, principally sticks and straw, of which the nest was composed. He alighted on the back of the female with each fresh supply, so as not to disarrange any part of the nest which she had formed. They began their task in the morning, and completed it the same evening. One egg was laid on the morning of the 26th, and the female commenced sitting immediately. A young bird was hatched in sixteen days. The male relieved the female during the period of incubation.

Another instance of the breeding in this country of the Passenger Pigeon, occurred nearly at the same time in the menagerie of the President of the Zoological Society, the Earl of Derby, at his seat, Knowsley, in Lancashire.

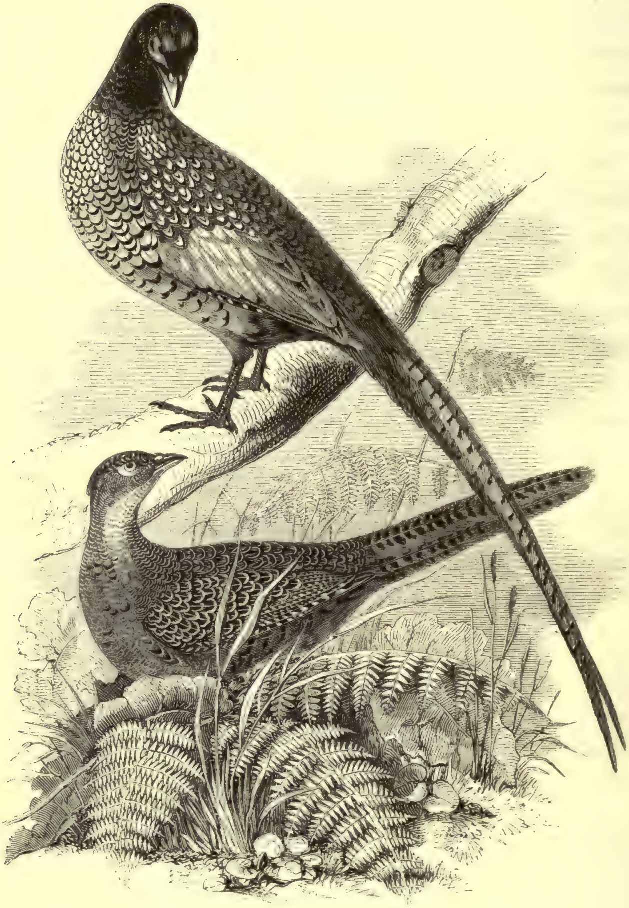
The beak is orange; the irides pale yellow; the head, cheeks, back of the neck, wing-coverts, back, and upper tail-coverts bluish grey; sides of the neck reddish chestnut, beautifully iridescent, reflecting green by transmitted light and purple by reflected light; lower part of the neck behind, the scapulars and tertials, brownish grey; wing-coverts with a few oblong spots of black; primaries lead grey, with lighter-coloured outer margins, the shafts black; the tail long, cuneiform; the four middle tail-feathers the longest, lanceolate and pointed; the outer four on each side graduated; the middle pair blackish brown; the next long feather on each outside white, tinged with pearl grey over a portion of the outer web, and lead grey at the base;

the other four outside feathers white, partly tinged with pearl grey, and at the base with lead grey; chin bluish grey; throat and breast rich chestnut bay, becoming paler on the belly and flanks; vent and under tail-coverts white; legs and toes rather long, and reddish orange; the claws black.

The whole length of an adult male bird seventeen inches. From the carpal joint to the end of the wing, eight inches and a half; the first and third quill-feathers equal in length, longer than the fourth, but a little shorter than the second, which is the longest in the wing.

The female is rather smaller than the male, seldom measuring more than sixteen inches in length, and her plumage is less pure and bright, being more tinged with brown.

RASORES. *PHASIANIDÆ.*



THE COMMON PHEASANT.

Phasianus colchicus.

Phasianus Colchicus,	*Common Pheasant,*	MONTAGU, Ornith. Dict.
" "	*The* "	BEWICK, Brit. Birds, vol. i. p. 331.
" "	" "	FLEM. Brit. An. p. 46.

Phasianus Colchicus, Common Pheasant,	Selby, Brit. Ornith. vol. i. p. 417.
„ „ „ „	Jenyns, Brit. Vert. p. 166.
„ „ „ „	Gould, Birds of Europe, pt. xxi.
„ „ *Faisan vulgaire,*	Temm. Man. d'Ornith. vol. ii. p. 453.

Phasianus. *Generic Characters.*—Bill of moderate length, strong; upper mandible convex, naked at the base, and with the tip bent downwards. Nostrils basal, lateral, covered with a cartilaginous scale; cheeks, and the skin surrounding the eyes, destitute of feathers, and with a verrucose red covering. Wings short: the first quill-feather narrow towards the tip; the fourth and fifth feathers the longest in the wing. Tail long, wedge-shaped, graduated, containing eighteen feathers. Feet—three toes in front, one behind; the three anterior toes united by a membrane as far as the first joint; the hind toe articulated upon the tarsus, which in the male birds is furnished with a horny, conical, and sharp spur.

Daniels, in his Rural Sports, says, Pheasants were brought into Europe by the Argonauts 1250 years before the Christian æra, and are at present found in a state of nature in nearly the whole of the Old Continent. It may surprise the sportsman to read that this bird, which he finds wild in forests which can scarcely be said to have an owner, was brought from the banks of the Phasis, a river in Colchis in Asia Minor, and artificially propagated with us, and in other parts of the globe. History assigns to Jason the honour of having brought this bird, on his celebrated expedition, from the banks of the Phasis, and hence the modifications of the word, viz.—Phasianus in Latin, Pheasant in our own language, Faisan in French, and Fasiano in Italian. The ancient Colchis, from which the specific name is derived, is the Mingrelia of the present day; and there, it is said, this splendid bird is still to be found wild, and unequalled in beauty. The price Pheasants bore, according to Echard's History of England, A.D. 1299, being the 27th of the reign of Edward the First, was fourpence: at the same period the value of a Mallard was three halfpence, a Plover one penny, and a couple of Woodcocks three halfpence.

Extensively diffused in England as far north as over the whole county of Northumberland, Mr. Selby yet observes in his work, that although the Pheasant has been for such a length of time a naturalised inhabitant of this country, the cause of its preservation must be referred, not so much to the wildness of its nature, as to the care and expense bestowed to that end by noblemen, and other considerable landed proprietors, without which the breed would, in all probability, have been long since extinct. Independent of the beauty of its plumage as an object of acquisition, the high estimation it bears at the tables of the wealthy and luxurious proves too tempting an inducement for the poacher, whose facilities are greatly increased by the peculiar habits of the species.

Woods that are thick at the bottom, with long grass kept up by brambles and bushes, thick plantations, or marshy islands and moist grounds overgrown with rushes, reeds, or osiers, are the favourite resorts of Pheasants, in default of which they take to thick hedgerows, but can seldom be induced to remain long on any ground bare of shelter, however undisturbed. Wood and water are considered indispensable.

The short crow of the males may be heard in March, and the females begin to lay their eggs in April, and hatch them by the end of May or the beginning of June. They make but little nest upon the ground, in which they deposit from ten to fourteen eggs, which are of a uniform olive brown colour, one inch ten lines long, by one inch five lines in breadth. The number of eggs that are occasionally found together appear to prove that two hen Pheasants will sometimes lay in one nest; and where game is strictly preserved, and the quantity considerable, Pheasants' eggs are occasionally found in the nest of the Partridge, so unsteady are they in their half reclaimed state.

They are very partial also to making their nest and laying their eggs in moist and thick clover bottoms, where they are very likely to be exposed and mowed out, and it is a good practice with gamekeepers to hunt such favourite grounds just before and at the commencement of the laying season, to disturb the birds continually in these spots, and thus induce them to go to nest in places where their natural process is less likely to be interfered with. To keep up a stock of Pheasants, several are kept all the year in pens, where many eggs are produced, but as the females will seldom sit steadily in confinement, these eggs, with others found by mowers, are hatched and reared by common hens of small size, which are generally found to be the best nurses. The young birds require to be carefully fed with ants' eggs, grits, maggots of flesh-flies, &c. till they are able to take coarser food, or old enough to go to stubble and provide for themselves.

The Pheasant, says Mr. Selby, "like most of the gallinaceous tribe, is very liable, especially in a state of confinement, to a disease called the *gapes*, so destructive to broods of chickens and young turkeys in particular situations. It is occasioned by an intestinal worm of the genus *Fasciola*, which, lodging in the trachea, adheres by a kind of sucker to its internal membrane, and causes death by suffocation from the inflamed state of the part. Many recipes for the cure of this malady have been suggested, but none of them seem to be effectual except the one recommended by Montagu, in the Supplement to his Ornithological Dictionary, under the article Pheasant,—namely, fumigation by tobacco, found to be an infallible specific when administered with due care and attention." The young birds are put into a wooden box, into which the fumes of tobacco are blown by means of a common tobacco-pipe: any state short of suffocation by the remedy is found to be a cure for the complaint.

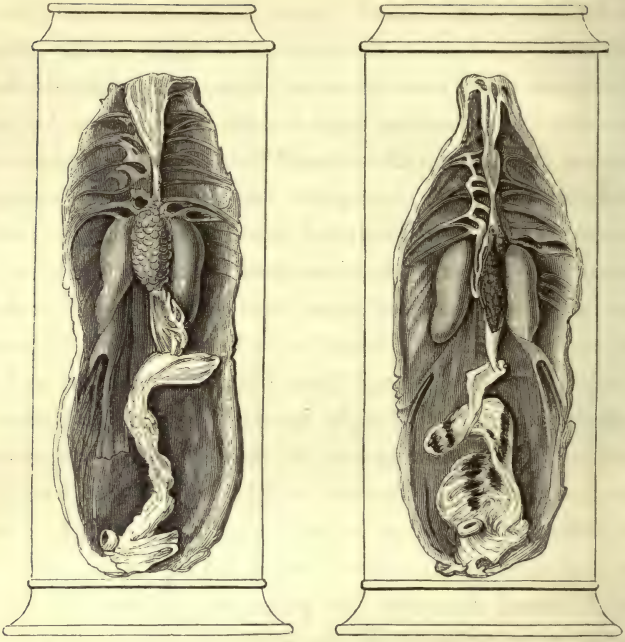
The food of Pheasants in a wild state consists of grain, seeds, green leaves, and insects. I have several times seen Pheasants pulling down ripe blackberries from a hedge side, and later in the year have also seen them fly up into high bushes to pick sloes and haws. Mr. Selby mentions he has observed that the root of the bulbous crowfoot, *Ranunculus bulbosus*, a common but acrid meadow plant, well known as the buttercup, is particularly sought after by the Pheasant, and forms a great portion of its food during the months of May and June; and another friend has noticed that they also feed on the pilewort crowfoot, *Ranunculus ficaria*. At the latter end of autumn I have found their crops distended with acorns of so large a size, that they could not have been swallowed without great difficulty. Towards and throughout the winter, Pheasants in preserves, to prevent them from straying away in their search for food, require to be supplied constantly with barley in the straw, or beans, or both; and one good mode of inducing them to stop at home is to sow in summer, beans, peas, and buckwheat, mixed together, leaving the whole crop standing on the ground; the strong and tall stalks of the beans carry up, sustain, and support the other two, and all three together afford, for a long time, both food and cover.

During summer, till the old birds have completed their seasonal moult, Pheasants do not roost constantly in trees, but afterwards they may be heard, about dusk, to go up to their roost, by the flutter of their wings, and their peculiar notes; the male giving his short chuckling crow, and the female her more shrill piping whistle, as soon as they get upon their feet on the branch: both generally roost upon the smaller trees, and near the stem. Unless disturbed, and obliged to secure their safety by flight, Pheasants seldom use their wings, except as before noticed, at night and morning: nor have they much occasion, as a mode of progression; the facility and speed with which they can get over the ground by running is quite surprising. Pheasants do not pair, and except during the spring, the males and females do not even associate. During the shooting season the males are found together, and are also observed to be much more wary and on the alert than the females. An old cock Pheasant immediately on hearing a dog give tongue in a wood where he is, will foot away to the nearest corner, particularly if the wood be open at bottom, and from thence run one dry ditch or hedgerow after another for half a mile to the next covert; but a hen Pheasant seems to trust to her brown colour to escape detection, and squatting in any bit of long grass that is near her, often surprises and startles the young shooter, not a little, by bouncing up with a rattling noise close at his feet, and the poor frightened bird is frequently indebted to the sensation thus created for a clear escape. The brown earth-like colour of the plumage of the females of several species of Pheasants seems to be a bountiful provision, not only for their individual safety, but in a degree for the preservation of the whole race. Mr. Jesse, in his Gleanings, has truly observed that, "while we admire the dazzling plumage of a male bird, we may wonder why the female appears so infinitely below him in the scale of beauty. Is it because she is to be considered as more degraded, or as an inferior being? When we see the male expanding his rich and varied plumage in the sunbeams, let us not forget that on the female devolves all the offices of love and affection. She hatches, feeds, and protects, at the risk of her life, her helpless young ones; and what we may consider as lower-ing her in the scale of creation, is, on the contrary, an act of the greatest kindness and consideration. Her want of beauty is her chief protection, and her very humility saves her from a thousand perils." It is on this account that some gamekeepers dislike having white or pied Pheasants on their ground. Any prowling boy can find a hen Pheasant on her nest, if she happens to have any white feathers in her plumage.

Among the various communications for which I am indebted to the kindness of the Rev. Richard Lubbock of Norfolk, are some extracts from the Household Book and Privy Purse accounts of the Lestranges of Hunstanton, from A.D. 1519 to 1578, communicated to the Society of Antiquaries by D. Gurney, Esq., in 1834. Such of these extracts as relate to birds, more particularly those in use for the table, I shall occasionally quote: some of them will be found curious, either for the mode by which the birds were taken, or the equivalent given for them. The first in reference to our present subject is,—"Item, to Mr. Asheley's servant for brynging of a Fesant Cocke and four Woodcocks on the 18th day of October, in reward, four-pence." The second,—"Item, a Fesant kylled with the Goshawke." The third,—"a notice, two Fesants and two Partridges killed with the Hawks." I may here remark that the ordinary weight of a Pheasant is about two pounds and a half; but under the influence of abundance of food in quiet preserves, where they are not disturbed perhaps more than once in a season, and that for a Christmas battue, the size attained is scarcely credible. Mr. Fisher, a poulterer in Duke Street, St. James's, in January 1839, exhibited a cock Pheasant which weighed four pounds and one quarter. Messrs. Sheppard and Whitear, in their Catalogue of Norfolk and Suffolk Birds, published in the fifteenth volume of the Transactions of the Linnean Society, mention, that at Campsey Ash, where the Pheasants are well fed with potatoes, buckwheat, and barley, a cock Pheasant has been killed which weighed four pounds and a half; and some winters since, my friend Mr. Louis Jaquier, then of the Clarendon, produced a brace of cock Pheasants which weighed together above nine pounds. The lighter bird of the two just turned the scale against four pounds and a half; the other bird took the scale down at once. The weights were accurately ascertained in the presence of several friends to decide a wager, of which I was myself the loser.

One peculiarity of the Pheasant must not be passed over, which is, its inclination to breed with other gallinaceous birds, not of its own species. This tendency exists also in a remarkable degree among the different species of Grouse, as will be hereafter noticed, with examples. Edwards long ago figured, plate 337, a bird which was considered to have been produced between a Pheasant and a Turkey. Henry Seymour, Esq., of Handford, Dorsetshire, discovered three or four of these birds in the woods near his house, and shot one in October 1759, which he sent to Mr. Edwards, who figured and described it, as quoted. I have twice been shown birds that were said to be the produce of the Pheasant and the Guinea Fowl, and the evidence to be derived from the plumage was in favour of the statement. Of birds produced between the Pheasant and the Black Grouse, several have occurred within the last few years; figures and particulars will be given under the head of Black Grouse. Birds produced between the Pheasant and Common Fowl are of frequent occurrence, and such a one is usually called a Pero. The Zoological Society have possessed several, which were for a time kept together, but showed no signs of breeding; they are considered like other hybrids to be unproductive among themselves, all being half bred; but when paired with the true Pheasant or the Fowl, the case is different. The Zoological Society has had exhibited at the evening meetings two instances of success in this sort of second cross. The first was in 1831, when the present Lord Saye and Sele exhibited a specimen of a hybrid Duck, bred between a male Pintail and a Common Duck. It was one of a brood of six, several of which were subsequently confined with the male Pintail from which they sprung, and produced young. A specimen of a female of this second brood was also exhibited.—*Zool. Proceedings for* 1831, p. 158. The second instance, though later in date, is more in point. In September 1836, a communication from Edward Fuller, Esq., of Carleton Hall, near Saxmundham, was read, which stated that his gamekeeper had succeeded in rearing two birds from a Barndoor Hen, having a cross from a Pheasant, and a Pheasant cock; that the birds partook equally of the two species in their habits, manners, and appearance, and concluded by presenting them to the Society. The gamekeeper of Edward Fuller, Esq., in a short note which accompanied the birds, stated that he had bred them, and they were three-quarter-bred Pheasants.—*Zool. Proceedings for* 1836, p. 84. Several specimens of hybrids, from the preserved collection in the Museum of the Society, were placed on the table the same evening for exhibition and comparision. These had been bred between the Pheasant and Common Fowl, the Common Pheasant and the Silver Pheasant, and the Common Pheasant with the Gold Pheasant.

A history of our Pheasant would be incomplete if left without any notice of that remarkable assumption of a plumage resembling the male observed to take place in some of the females, which is well known to sportsmen and gamekeepers, by whom such birds are usually called Mule Pheasants. The name is correct, since some of our dictionaries show that the term mule is derived from a word which signifies barren, and these hen Pheasants are incapable of producing eggs from derangement of the generative organs; sometimes an original internal defect, sometimes from subsequent disease, and sometimes from old age. The illustration given on the next page represents on a small scale a preparation of part of the body of a healthy female Pheasant in winter, in the left hand figure; and that of a diseased female Pheasant on the right hand. The disorganisation is marked by the appearance of the dark lead colour pervading the ovarium, situated on the middle line, and between the two kidneys, which dark colour is seen in patches on various parts of the oviduct below; and I have never examined a hen Pheasant assuming the plumage of the male without finding more or less of the appearance here indicated. The subject, however, in its details, is unsuited to this popular work; but those who desire to carry their investigation further will find a paper by Dr. Butter in the third volume of the Memoirs of the Wernerian Society; one by John Hunter in the various editions of his Animal Œconomy, and one by myself, published in the Transactions of the Royal Society for the year 1827. I have seen this disorganisation and its effects among birds in the Gold, Silver, and Common Pheasants, in the Partridge, the Peafowl, the Common Fowl, the Crowned Pigeon, the Kingfisher, and the Common Duck: in the latter species, in two instances, the change went on even to the assumption of the two curled feathers above the tail. Other classes of animals are liable to an influence similar in kind, and the effect is singularly conspicuous among insects and crustacea.



In the adult male the beak is of a whitish horn colour, rather darker at the base; the eyes surrounded with a naked skin of a bright scarlet colour, speckled with a bluish black; the irides hazel; the head, and the neck all round, steel blue, reflecting brown, green, and purple, in different lights; ear-coverts dark brown; feathers of the upper part of the back orange red, tipped with velvet black; back and scapulars orange red, the centre of each feather dark brown, with an outer band of straw yellow; saddle hackle feathers, rump, and upper tail-coverts, light brownish red; wing-coverts of two shades of red; quill-feathers dull greyish brown, varied with pale wood brown; tail-feathers very long, pale yellow brown, with narrow transverse black bars about one inch apart; breast and belly golden red; each feather margined with velvet black, and reflecting tints of gold and purple;

lower part of the belly, vent, and under tail-coverts, brownish black; legs, spurs, toes, and claws, brownish lead colour; the spurs become pointed and sharp after the first year.

The whole length of a male Pheasant about three feet, depending upon the age of the bird, and the consequent length of the two middle feathers of the tail, which frequently measure two feet. Wing from the carpal joint to the end nearly ten inches; the wing in form rounded; the fifth quill-feather the longest.

The female measures about two feet. The general colour of the plumage pale yellowish brown, varied by different shades of darker brown; sides of the neck tinged with red and green.

Young birds of the year, of both sexes, in their first plumage, resemble the females.

Females assuming the plumage of males may be known by their partial want of brilliancy of tint; the golden red feathers on the breast generally want the contrast of the broad dark velvet-like margin; the legs and feet retaining their smaller and more slender female character, and are without spurs.

White and Pied varieties of the Pheasant are not uncommon; and this account of our Pheasant having extended to an unusual length, the Ring-necked and Bohemian Pheasants will for brevity's sake, be considered also as only varieties. The first may be known, when old enough, by the white feathers which form part of a circle on the sides and back of the neck; I have never, in the oldest specimens, seen the ring continued round the front; the saddle hackle feathers have peacock-green and copper reflections; the tail-feathers have broader dark bars, and the spaces between the bars speckled with black.

The two or three examples which I have seen of what are called the Bohemian Pheasant, shot in this country, have appeared to be accidental varieties, very pale in colour on the neck, and approaching to buffy white on the chest, back, and wing, apparently from weakness and consequent defective secretions.

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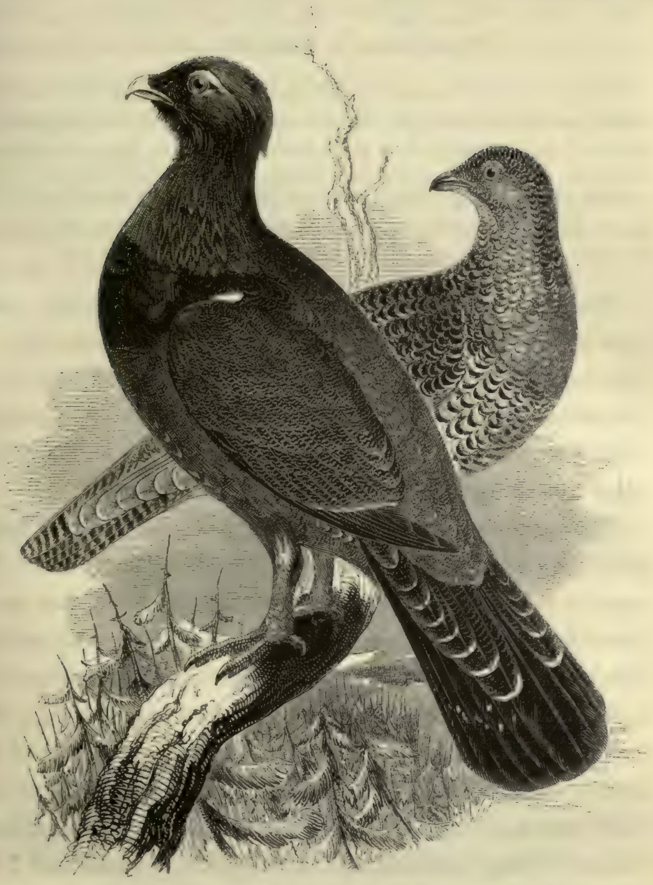


THE CAPERCAILLIE.

WOOD GROUSE, OR COCK OF THE WOOD.

Tetrao urogallus.

Tetrao urogallus,	*Wood Grouse,*	PENN. Brit. Zool. vol. i. p. 347.
" "	" "	MONTAGU, Ornith. Dict.
" "	" "	BEWICK, Brit. Birds, vol. i. p. 345.

Urogallus vulgaris,	*Cock of the Wood,*	FLEM. Brit. An. p. 46.
Tetrao urogallus,	*Wood Grouse,*	JENYNS, Brit. Vert. p. 168.
„ „	*Capercailzie,*	GOULD, Birds of Europe, pt. xvii.
„ „	*Tetras auerhan,*	TEMM. Man. d'Ornith. vol. ii. p. 457.

TETRAO. *Generic Characters.*—Bill short, strong; upper mandible convex, and arched from the base to the tip. Nostrils basal, lateral, partly closed by an arched scale, and hidden from view by small closely-set feathers. Space above the eye naked, the skin red with papillæ, and fringed. Wings short and rounded in form; the fifth quill-feather the longest. Tail of sixteen feathers. Feet with the toes naked, three in front united as far as the first joint, and one toe behind, short, the edges of all pectinated. Tarsi feathered to the junction of the toes.

THE liberal and persevering endeavours of several noblemen to re-establish the Wood Grouse, or Capercaillie, in this country having been successful, to a certain extent, in one district of Scotland, as the details to be here related will show, I have inserted this fine species in its proper place at the head of our Grouse.

The term Capercaillie is derived from the Gaelic, Capullcoille, which means literally the horse of the wood: this species being in comparison with the others of the genus preeminently large, this distinction is intended to refer to size, as it is usual now to say horse-mackerel, horse-ant, horse-fly, horse-leach, horse-chestnut, and horse-radish. The Latin specific term *urogallus*, the German *auerhan*, and the Dutch *ouerhan*, refer in the same way to size. *Urus*, is a wild bull, and the names bulldog, bullfinch, bullhead, bull-trout, bullfrog, and bullrush, are applied to species of large size in Zoology and Botany. Pennant says, that north of Inverness the Wood Grouse was also known by the names Caper-calze, and Auer-calze. This bird formerly existed in Ireland, and the last was said to have been killed about the year 1760. The last of them killed in Scotland, and near Inverness, happened later than the year just recorded.

The most recent, as well as the best, account of the habits of this noble bird that I am acquainted with is furnished by L. Lloyd, Esq. in his Field Sports of the North of Europe, written during a residence in Sweden and Norway; and as the opportunity of studying this bird in his native forests occurs to but few, I hope I shall be excused for selecting from this very interesting work a portion of the following pages.

"The Capercali is to be found in most parts of the Scandinavian peninsula; indeed as far to the north as the pine tree flourishes, which is very near to the North Cape itself. These birds are, however, very scarce in the more southern of the Swedish provinces. The favourite haunts of the Capercali are extensive fir woods. In coppices, or small cover, he is seldom or never to be found. Professor Nilsson observes that those which breed in the larger forests remain there all the year round; but those which, on the contrary, breed on the sides of elevated mountains, or in a more open part of the country, in the event of deep snow, usually fall down to the lower grounds."

"The principal food of the Capercali, when in a state of nature, consists of the leaves and tender shoots of the Scotch fir, *Pinus sylvestris.* He very rarely feeds upon those of the spruce, *Pinus abies.* He also eats juniper berries, cranberries, blueberries, and other berries common to the northern forests; and occasionally also, in the winter time, the buds of the birch, &c. The young Capercali feed principally at first on ants, worms, insects, &c."

"In the spring of the year, and often when the ground is still deeply covered with snow, the cock stations himself on a pine, and commences his love-song, or play, as it is termed in Sweden, to attract the hens about him. This is usually from the first dawn of day to sunrise, or from a little after sunset until it is quite dark. The time, however, more or less, depends upon the mildness of the weather, and the advanced state of the season. During his play, the neck of the Capercali is stretched out, his tail is raised and spread like a fan, his wings droop, his feathers are ruffled up, and in short, he much resembles in appearance an angry Turkey-cock. He begins his play with a call something resembling the word *peller*, *peller*, *peller*; these sounds he repeats at first at some little intervals; but as he proceeds they increase in rapidity, until at last, and after perhaps the lapse of a minute or so, he makes a sort of gulp in his throat, and finishes by drawing in his breath. During the continuance of this latter process, which only lasts a few seconds, the head of the Capercali is thrown up, his eyes are partially closed, and his whole appearance would denote that he is worked up into an agony of passion."

"On hearing the call of the cock, the hens, whose cry in some degree resembles the croak of the Raven, or rather, perhaps, the sound *gock*, *gock*, *gock*, assemble from all parts of the surrounding forest. The male bird now descends from the eminence on which he was perched to the ground, where he and his female friends join company."

"The Capercali does not play indiscriminately over the forest, but he has his certain stations, which may be called his playing-grounds. These, however, are often of some little extent. Here, unless very much persecuted, the song of these birds may be heard in the spring for years together. The Capercali does not during his play confine himself to any particular tree, and is seldom to be met with exactly on the same spot for two days in succession. On these playing-grounds several Capercali may occasionally be heard playing at the same time. Old male birds will not permit the young ones, or those of the preceding season, to play. Should the old birds, however, be killed, the young ones, in the course of a day or two, usually open their pipes. Combats, as may be supposed, not unfrequently take place on these occasions; though I do not recollect having heard of more than two of these birds being engaged at the same time."

"The Capercali hen makes her nest upon the ground, and lays from six to twelve eggs; these are two inches three lines long, by one inch eight lines in breadth, of a pale reddish yellow brown, spotted all over with two shades of darker orange brown. It is said she sits for four weeks. Her young keep with her until towards the approach of winter; but the cocks separate from the mother before the hens."

When the females really commence incubation, they are forsaken by the old males, who skulk about among the brushwood while renewing their plumage, the female alone attending to the hatching and rearing of her progeny.

My friend the late W. Christy, jun. whose premature death was sincerely regretted, says, in his journal, kept when on a trip to Norway in 1836, under the date of August 8th, "I was not a little startled, whilst gathering a plant near the river side, by the sudden rising, within a yard of me, of a fine Cock of the Woods. Shortly afterwards I heard several shots, and on rejoining my companions I found they had succeeded in bringing down a female, and several half-grown young ones. In the course of the day several other young males were shot, but we were unable to procure one in adult plumage." Linnæus, in his Tour in Lapland, says the Wood Grouse there are caught in traps; the bodies are dried, and will keep for a year.

Mr. Lloyd observes, that "excepting there be a deep snow, the Capercali is much upon the ground in the day time; very commonly, however, he sits on the pines, sometimes on the very uppermost branches. During the night he generally roosts in the trees; but if the weather be very cold, he not unfrequently buries himself in the snow. Considering the large size of the bird, his flight is not particularly heavy or noisy." Mr. Lloyd has not only seen this bird at a very considerable height in the air, but has known him take a flight of several miles at a time. "The Capercali lives to a considerable age; at least so I infer," says Mr. Lloyd, "from the cocks not attaining to their full growth until their third year or upward. The old ones may be easily known from their greater bulk, their eagle-like bill, and the more beautiful glossiness of their plumage. The size of these birds appears to depend, in a great degree, on the latitude where they are found. In Lapland, for instance, the cocks seldom exceed nine or ten pounds. In Wermeland, and adjacent parts, again, I have never heard of their being killed of more than thirteen pounds; whilst in the more southern provinces of Sweden,—and I have three several authorities for my statement—they have not unfrequently been met with weighing seventeen pounds and upwards. The hen Capercali usually weighs from five to six pounds."

"The Capercali is often domesticated in Sweden; indeed, both at Uddeholm and Risater, as well as other places, I have known them to be kept for a long period in aviaries built for the purpose. These birds were so perfectly tame as to feed out of the hand. Their food principally consisted of oats, and of the leaves of the Scotch fir, *Pinus sylvestris*, large branches of which were usually introduced into their cages once or more in the course of the week. They were also supplied with abundance of native berries when procurable. They were amply provided at all times with water and sand; the latter was of a coarse quality, and both were changed pretty frequently."

"It has been asserted that the Capercali will not breed when in a state of domestication: this is altogether a mistake; repeated experience has proved the contrary. A few years ago I procured a brace of those birds, consisting of a cock and hen, for a friend of mine, Thomas Fowell Buxton, Esq. the member for Weymouth, then resident at Cromer Hall, in Norfolk. After a few months, the hen laid six eggs, and from these, in process of time, six Capercali were produced. The chicks lived until they had attained a very considerable size, when, owing to the effects, as it was supposed, of a burning sun, to which they had been incautiously exposed, the whole of them, together with the mother, died. On this mishap, the old cock, the only survivor, was turned loose into the game preserves, where he remained in a thriving condition for about a year and a half. At last, however, he also met his doom, though this was supposed to have been owing rather to accidental than natural causes. In farther corroboration of the fact, that the Capercali will breed when in confinement, I make the following quotation from M. Nilsson's work. That gentleman's authority was the Ofwer Director of Uhr, and the birds alluded to were at a forge in the province of Dalecarlia. They were kept together during the winter in a large loft over a barn, and were fed with corn, and got occasionally a change of fresh spruce, fir, pine, and juniper sprigs. Early in the spring they were let out into an enclosure near the house, protected by a high and close fence, in which were several firs and pines, the common trees of the place. In this enclosure they were never disturbed; and during the season of incubation no one approached, except the person who laid in the food, which at that time consisted of barley, besides fresh sprigs of the kinds before mentioned. It is indispensable that they should have full liberty, and remain entirely undisturbed, if the hens are to sit and hatch their young. As soon as this had occurred, and the brood were out, they were removed to the yard, which was also roomy, and so closely fenced that the young ones could not escape through ; and within this fence were hedges and a number of bushes planted. Of the old ones, one of the wings were always clipped, to prevent their flying. I have seen several times such broods both of black game and Capercali, eight to twelve young ones belonging to each hen. They were so tame, that, like our common hens, they would run forward when corn was thrown to them. They should always have a good supply of sand and fresh water."

" The young birds should be supplied with ant eggs in conjunction with the materials of which the hills of those insects are composed ; hard boiled eggs are to be chopped and mixed amongst fine moistened barley meal ; also peahaum and trefoil grass. They must have plenty of water, which should be placed so that they cannot overturn the pitcher, for they suffer very much if they get wet when they are young. Dry sand and mould they never should be without : when they get larger, and cabbage leaves, strawberries, cranberries, and blueberries are to be had, they are fond of such food ; and when they are full grown, they eat barley and wheat ; and in winter they should have young shoots of pine and birch buds. I have seen many people who thought they treated young birds well by giving them juniper berries ; but they never resort to this kind of food but in cases of necessity."

I have purposely gone to considerable length in these extracts in reference to the modes of treating both the old and the young birds in a state of confinement, because great labour and very considerable sums have been expended to reintroduce these magnificent birds to the forests of Scotland: several noblemen have been for some seasons past, and are at present engaged in this undertaking, and others may be induced to assist, from the success that has already attended these endeavours, and the mode of management being supplied. During the year 1838, and in the early part of 1839, Lord Breadalbane received at his seat in Scotland forty-four Capercaillie altogether, about two-thirds of which were hens, and all were old and seasoned birds. This splendid collection was made in Sweden, with vast trouble and very great expense, by Mr. L. Lloyd. Thomas F. Buxton, Esq., formerly member for Weymouth, presented them to his lordship; and it will be gratifying to every one who takes an interest in our native birds to know, that a portion of these being retained in a large aviary, and others turned out into the forest, both divisions have succeeded, and seventy-nine young birds were known to be hatched out during the season of 1839.

Since the account of the Capercaillie here given was printed, I have learned, by the publication of an article upon this bird in the Sporting Review for April 1840, that the greatest success in hatching and rearing the young birds was obtained, at the seat of Lord Breadalbane in Scotland last year, by putting the eggs laid by the Capercaillie hens in the aviary into the nests of the Black Grouse. "Forty-nine young Capercaillies were, by this single method, known to have been hatched out by the Grey-hens."

About the end of the year 1827, or early in January 1828, Lord Fyfe commenced with a pair of birds, and in February 1829 received a second pair; but I have not heard what success has attended this attempt. "It was intended as soon as some healthy broods had been reared in confinement, to liberate a few in the old pine woods of Braemar, and thus eventually to stock with the finest of feathered game the noblest of Scottish forests."

Three birds were sent in 1838 to the Duchess of Athol, at Blair; and several were sent to the Earl of Derby at Knowsley, in whose aviary five young birds were hatched last summer, four of which are now doing well.

"According to M. Nilsson, when the Capercali is thus reared, he frequently becomes as tame as a domestic fowl, and may be safely left at large. He, however, seldom loses his natural boldness; and, like the Turkey-cock, will often fly at and peck people. He never becomes so tame and familiar as the Black-cock. Even in his wild state, the Capercali occasionally forgets his inherent shyness, and will attack people when approaching his place of resort. Mr. Adlerberg mentions such an occurrence. During a number of years, an old Capercali cock had been in the habit of frequenting the estate of Villinge at Wormdö, which, as often as he heard the voice of people in the adjoining wood, had the boldness to station himself on the ground, and, during a continual flapping of his wings, pecked at the legs and feet of those that disturbed his domain. M. Brehm, also, mentions in his Appendix, page 626,— a Capercali cock that frequented a wood, a mile distant from Renthendorf, in which was a path or roadway. This bird, as soon as it perceived any person approach, would fly towards him, peck at his legs, and rap him with its wings, and was with difficulty driven away. A huntsman succeeded in taking this bird, and carried it to a place about fourteen English miles distant; but on the following day the Capercali resumed his usual haunt. Another person afterwards caught him, with a view of carrying him to the Ofwer Jagmästare. At first the bird remained quiet; but he soon began to tear and peck at the man so effectually, that the latter was compelled to restore him to his liberty. However, after a few months he totally disappeared, having probably fällen into the hands of a less timid bird-catcher."

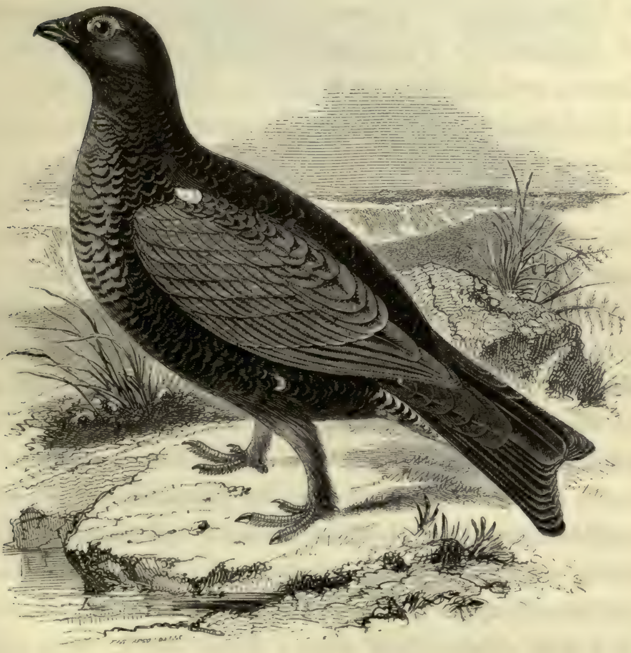
Mr. Lloyd says, "The Capercali occasionally breed with the Black Grouse, and the produce are in Sweden called *Racklehanen*; these partake of the leading characters of both species, but their size and colour greatly depend upon whether they have been produced between the Capercali cock and the Grey hen, or *vice versâ*." Females of these hybrids appear to be much more rare than males; but neither sex, according to Mr. Lloyd, are common: he had, however, himself shot one, and his sporting friend, Mr. Falk, had shot two. Among the quantities of Capercaillie which are received every season in the London market, and are said to come from Norway, the male birds of this hybrid are occasionally to be found. Within the last ten years I have certainly seen as many as seven specimens at the shop of one poulterer, four of which were in beautiful plumage, and were purchased by Mr. Leadbeater, Mr. Gould, or others, to preserve for collections. This hybrid appears to be well known in those countries which are inhabited by the Black Grouse as well as the Capercaillie, and has been named by various authors *Tetrao medius*, *Tetrao hybridus*, and *Urogallus hybridus*: some considering the bird a distinct species, and others only a hybrid. There is even reason to believe that it formerly existed in Scotland, contemporary with the Capercaillie. Mr. G. T. Fox, in his Synopsis of the contents of the Newcastle Museum, published in 1827, quotes the Tunstall MS. at page 78, in the following words: "I know some old Scotch gentlemen, who say they remember when young there were in Scotland both the Cock of the Wood, as also the Hybridus:" and, at page 245, Mr. Fox has given a figure of this last-named bird, from a specimen in the Newcastle Museum, which was engraved on copper by Robert Bewick from a drawing made by his father Thomas Bewick. The bird has since been figured by Gould, Werner, and others. The figure of the bird given on the next page, was taken from a coloured representation illustrating the Fauna of Scandinavia by M. Nilsson.

A beautiful specimen of this bird, exhibited by Mr. Gould at the Zoological Society in the spring of 1831, was thus briefly described in comparison with the Capercaillie, in the Proceedings of the Society for that year, at page 73. "In the *Tetrao medius* the beak is black; the shining feathers on the front of the neck are of a rich orleans-plum colour; and of the eighteen feathers of the tail the outer ones are the longest. In the Cock of the Wood the beak is white; the feathers on the front of the breast are of a dark glossy green; and the centre feathers of the tail are the longest." There is a fine specimen in the collection at the British Museum.

Females of this hybrid, as I have before mentioned, appear to be much more rare than the males. Two examples are said to be preserved in the Royal Museum at Stockholm, and one in the Museum at Geneva, which M. Necker, in his Memoir on the Birds of Geneva, says, was obtained from the pine forests of Mount Jura in winter; there is also in the same collection a male from St. Gothard, which was bought in the market of Lausanne in September 1834. It deserves at the same time to be mentioned that Klein in his Ova Avium, published at

Leipsic in 1766, has given a coloured representation of the egg of *Urogallus hybridus*, tab. 15, fig. 2, intermediate in size, and placed between the eggs of the Capercaillie and Black Grouse, with a short reference to, and description of, each, at page 33, as follows:—Fig. 1. Auerhahn. *Urogallus major. Ovum coloris rubiginosi, hinc inde maculis parvis obscurioribus notatum.* Fig. 3. Birkhan. *Urogallus minor. Ovum priori simile, sed minus* Fig. 2. Zwitter vom Auerhahn und Birkhenne. *Urogallus hybridus. Ovum dilutius, maculis majoribus.*

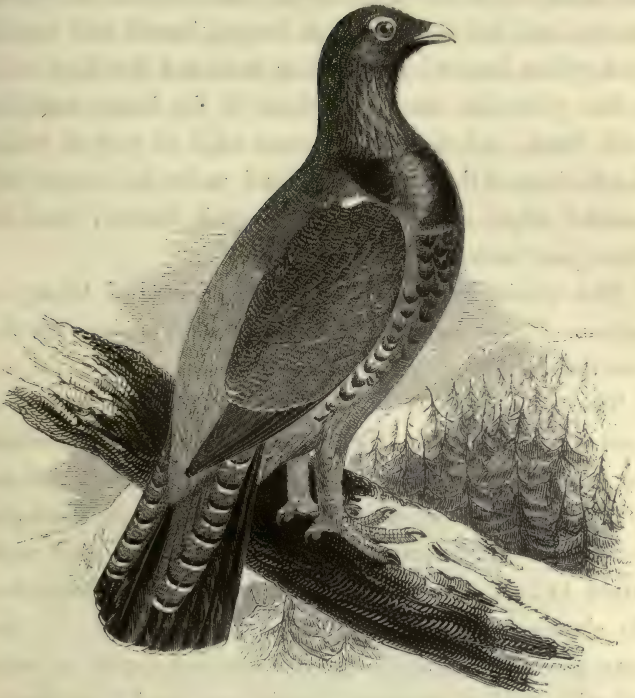
I have referred, in the article on the Pheasant, to the singular change which takes place in the plumage of some of the females among Pheasants, and other birds,



by which they assume, to a certain extent, the colours of the male; and M. Nilsson having figured in his illustrations before mentioned, a female of the Wood-grouse in the plumage of the male, which he calls truly a barren female, I have inserted a figure of that bird on the next page.

The Capercaillie appears to have an extensive geographical range. North of the British Islands, M. Necker says it is found in Jutland. Mr. Lloyd says it is found generally over Scandinavia as far north as the pine forests extend, which is almost as far as North Cape; but is becoming rare in the southern parts. It is found in Russia and Siberia; in Livonia, in Poland and Germany. M. Temminck says it is found in Hungary, that it is rare in France, and is never seen in Holland. M. Vieillot, a Continental authority, states that it is met with on the Alps, the Pyrennees, in Auvergne, in Dauphigny, in the forests on the mountains of Ardennes, in Upper Alsace, in Lorraine, in Italy, in Greece, and in Tartary. M. Temminck also says that it has been known as far south as some of the islands of the Grecian Archipelago.

The adult male has the beak of a whitish horn colour; the irides hazel; over the eye a semilunar patch of naked skin which is bright scarlet; plumage of the head, the neck in front and behind, the back, rump, and upper tail-coverts, minutely freckled with greyish white on a brownish black ground; the feathers of the crown of the head and on the throat rather elongated; wing-coverts and wings freckled with light brown on a darker brown ground; the depth of the tint depending on the greater age of the bird; quill-feathers dark chestnut brown; tail-feathers nearly black, with a few greyish white spots; some of the longer and lateral upper tail-coverts tipped with white; the chest of a fine shining dark green; breast black, with a few



white spots; flanks and under tail-coverts greyish black, spotted with white; under wing-coverts white, a small patch appearing on the outside near the shoulder; thighs grey; legs feathered with darker grey; toes and claws black.

The whole length of the male described, three feet four inches. From the carpal joint to the end of the wing sixteen inches: the first feather two inches shorter than the second, and the second one inch shorter than the third; the third, fourth, and fifth feathers nearly equal in length, but the third the longest feather in the wing.

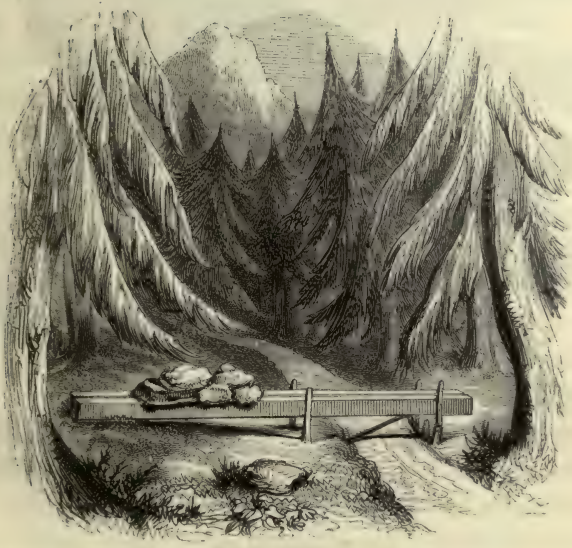
The adult female has the beak brown ; the irides hazel : the feathers of the head, neck, back, wings, upper tail-coverts and tail-feathers dark brown, barred and freckled with yellow brown ; the neck in front and the chest are of a fine yellowish chestnut ; those of the breast margined with black, and with an extreme edge of greyish white ; the feathers of the flanks, vent, and under tail-coverts with broader edges of white ; legs greyish brown ; toes and claws pale brown.

The whole length of the female described twenty-six inches. From the carpal joint to the end of the wing thirteen inches.

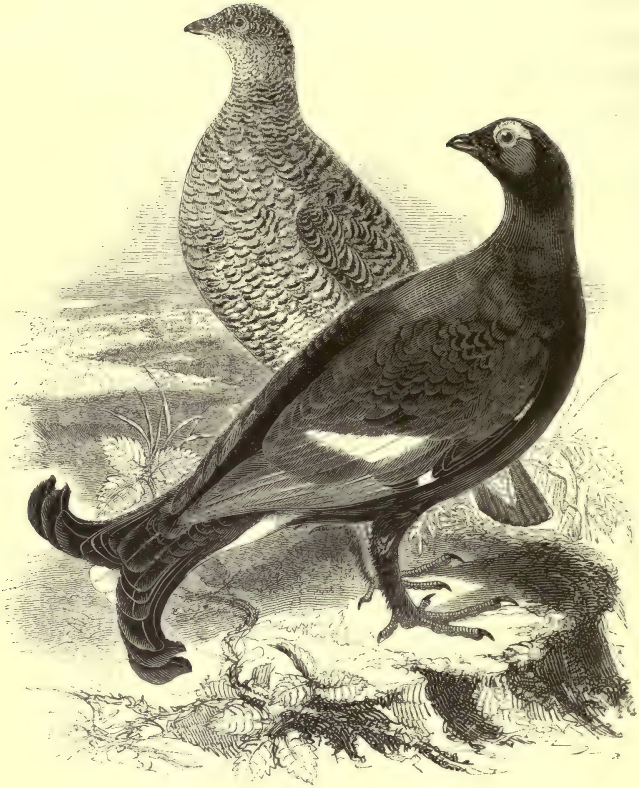
The young birds of both sexes in their first plumage resemble the old female, the young males afterwards obtaining by slow degrees the colours which distinguish that sex.

A young male preserved in the Museum of the Zoological Society, about twenty-two inches in length, and rather larger in bulk than a cock Pheasant, has nearly completed his change ; the chestnut coloured feathers on the chest have assumed part of the green colour peculiar to the males, but still retain a portion of the chestnut, and is evidently a change of colour without losing the feather, the black crescent changing to green.

A simple and ingenious trap is sometimes used by the peasants in Norway for taking the Capercaillie ; and I am indebted to Mr. Grant for a description of it, and also for the drawing from which the vignette below was derived. Where the trees grow thickly on either side of a foot-path, two long pieces of wood are placed across it ; one end of these rests on the ground, the other being raised a foot and a half, or somewhat more, from the surface, and supported by a piece communicating with a triangular twig, placed in the centre of the path, and so contrived that on being slightly touched the whole fabric falls: a few stones are usually placed upon the long pieces of wood to increase the weight. Birds running along the foot-path, attempt to pass beneath the barrier, strike the twig, and are killed by the fall of the trap.



RASORES. *TETRAONIDÆ.*



THE BLACK GROUSE.

Tetrao tetrix.

Tetrao tetrix,	*Black Grouse,*	Penn. Brit. Zool. vol. i. p. 352.
" "	" "	Montagu, Ornith. Dict.
" "	" "	Bewick, Brit. Birds, vol. i. p. 348.
" "	" *Cock,*	Flem. Brit. An. p. 43.
" "	" *Grouse,*	Selby, Brit. Ornith. vol. i. p. 423.
" "	" *Grouse,*	Jenyns, Brit. Vert. p. 169.
" "	" *Grouse,*	Gould, Birds of Europe, pt. xxi.
" "	*Tetras Birkhan,*	Temm. Man. d'Ornith. vol. i. p. 460.

The Black Grouse inhabiting in small numbers a few particularly wild localities in some of the southern counties of England is much more numerous in the north, and from Northumberland, throughout the greater part of Scotland, is found in considerable quantities where well wooded and mountainous districts afford shelter and winter food. They are also found, according to Mr. Macgillivray, on the islands of Mull and Sky in the Hebrides, but not on any of the islands of Orkney and Shetland.

The Black Grouse,—our name is considered to be derived from the Persian word, *groos*,—though partial to bogs and morasses, where the herbage grows rank and strong, is more arboreal in its habits than either the Red Grouse or the Ptarmigan; and like the Capercaillie, last described, it does not pair, but the males in the spring resort to some particular elevated and open spots, where they may be heard in the morning and evening repeating their call of invitation to the other sex, and displaying a variety of attitudes, trailing their wings, raising and spreading their tails, accompanied, as Mr. Selby observers, by a crowing note, and by another sound similar to that made by the wetting of a scythe; their voice is loud, and may be heard from a considerable distance; their plumage is at this time in the highest perfection. The other sex assemble at the well-known call: but, like the hens of the last species, they do not long retain the attentions of their sable lords. The females make a slight nest on the ground, frequently under shelter of some low thick bush, in which they deposit from six to eight eggs: these are yellowish white, spotted and speckled with orange brown; two inches in length, by one inch five lines in breadth. The dreary task of incubation is performed by the female only, and, being deserted by the male, upon her alone devolves the care and provision of the brood. In their first plumage the young birds of both sexes resemble the female, but the young males by the month of August, being then more than half grown, begin to show some of the black feathers which distinguish the sex, and which first appear in spots and patches about the sides and breast. The change to the complete dark plumage goes on in some instances so slowly, that I lately saw a young male of the season of 1839, which retained a few brown feathers as late as the middle of the month of February 1840.

In the summer these birds live upon seeds, the tender shoots of heath, leaves, and some insects. In autumn they feed on berries of various sorts, occasionally visiting corn-fields and stubbles; and in winter I have found their crops distended with the tips of the most recent shoots of pines and firs.

The supply of these birds to the London poulterers is very large and continuous, from the end of August till the following month of April; during the first four months from Scotland, and afterwards from Norway and Sweden. Grouse shooting commences in Norway on the first day of August; and so numerous are these birds in some parts of Sweden, where they are strictly preserved, where the hens are never shot at, and no spring shooting allowed, that one hundred Black Cocks have not unfrequently been killed in one day.

In the southern parts of England, Black Grouse are found in Sussex on Ashdown Forest; in Surrey on St. Leonard's Forest, near Horsham, and from Pudmores along the brows of the heath-hills towards Tilford, and again from Tilford up to the Devil's Punch-bowl on Hindhead. In 1815, H. M. Thornton, Esq., of Chobham, brought two Black Cocks and three Grey Hens from Holland. These birds were turned out on the Hurtwood, a tract of heath between Guildford and Dorking. At that time this species of game had been extinct in that part for fifty years; but these foreign birds, being well preserved, have replenished the district. They bred the following spring after their introduction, and the first nest observed was within a hundred yards of the spot where they were first turned out. Some of the descendants of these birds have strayed to the heathy districts between Farnham and Bagshot, and have extended themselves as far as Finchampstead in Berkshire. Black Grouse occur again in Hampshire on the New Forest, and from thence along to the westward in Dorsetshire; they are found on Dartmoor and Exmoor in Devonshire, and are abundant on the property of Lord Cærnarvon near Dulvarton, on the north-eastern border of Devonshire, and the heaths of Somersetshire, from whence they are found in Worcestershire and Staffordshire; they are found also on most of the extensive heaths of Shropshire, and on the Beswyn chain near Corwen. It is included in the catalogue of the birds of Lancashire, and from thence becomes more plentiful on proceeding northwards.

Black Grouse are common over nearly the whole of Scandinavia. Linnæus met with it on his tour high up in the forests of Lapland; it is found in Russia, Siberia, Poland, Germany, Holland, France, and along the whole chain of the Alps, and other mountain ridges that are covered with forests, and, according to Savi, in Italy.

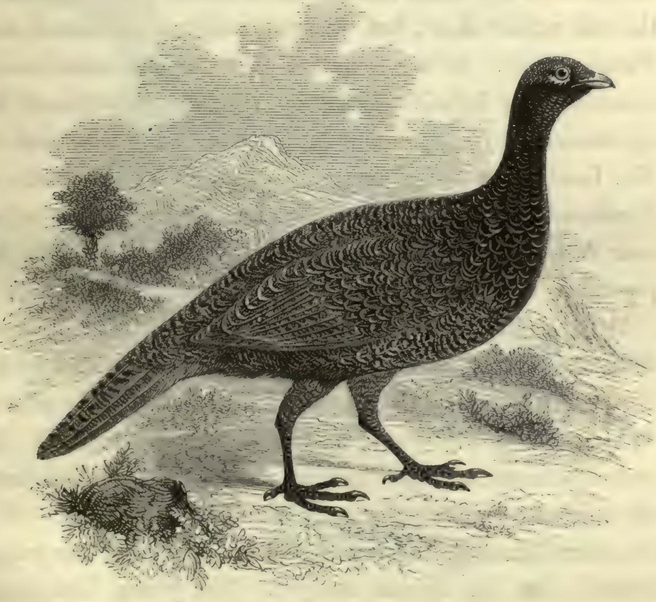
Having mentioned the tendency among Pheasants and Grouse to breed one with another occasionally, without restriction to their own species, I may here particularise the various examples of hybrids between the Pheasant and the Black Grouse in the order in which they have been recorded. The first is the bird noticed by Gilbert White of

Selborne, of which a coloured representation is given in some of the editions of his work. The subject being then new, the real character of that specimen was a matter of doubt, till more recent experience, and other examples, seemed to confirm its origin. In June 1834, the late Mr. Sabine called the attention of the members present at a meeting of the Zoological Society to a specimen of a hybrid bird, between the common Pheasant and the Grey Hen, which was exhibited. Its legs were partially feathered; it bore on the shoulder a white spot, and its middle tail-feathers were lengthened. It was bred in Cornwall.—*Zool. Proc.* 1834, page 52. This bird belonged to Sir William Call.

In 1835, T. C. Eyton, Esq., residing near Wellington, Shropshire, sent up for exhibition to the Zoological Society, a hybrid bird between the cock Pheasant and the Grey Hen, with a note, as follows:—"For some years past a single Grey Hen has been seen in the neighbourhood of the Merrington covers, belonging to Robert A. Slaney, Esq., but she was never observed to be accompanied by a Black Cock, or any other of her species. In November last a bird was shot on the manor adjoining Merrington, belonging to J. A. Lloyd, Esq., resembling the Black game in some particulars, and the Pheasant in others. In December another bird was shot in the Merrington covers, resembling the former, but smaller; this, which is a female, is now in my collection, beautifully preserved by Mr. Shaw of Shrewsbury."—*Zool. Proc.* 1835, page 62.

The figure given on the opposite page represents this bird, Mr. Eyton having with great kindness allowed me the use of his specimen for that purpose. Mr. Eyton observes, in his work on the Rarer British Birds, that the brood to which his hybrid bird belonged, consisted of five; one of them remained in the possession of J. A. Lloyd, Esq., of Leaton Knolls: the other three, with the old Grey Hen, fell victims to a farmer's gun, and were consequently destined to the table. Mr. Eyton further remarks, at page 101, that he had also seen another specimen killed near Corwen, in Merionethshire, and then in the collection of Sir Rowland Hill, Bart.

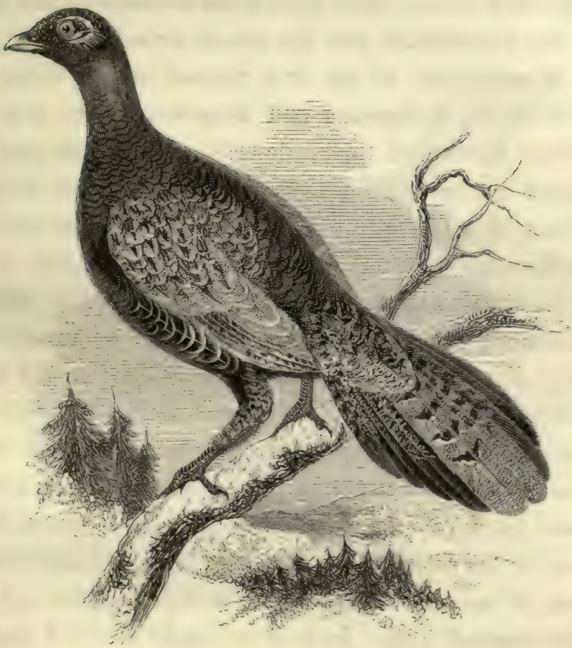
In the first volume of the Magazine of Zoology and Botany, William Thompson, Esq., of Belfast, describes in detail another hybrid that had been shot in Wigtonshire, and was preserved for Sir Andrew Agnew, Bart., M.P. This bird was shot in a wild state at Lochnaw, where it had been seen several times on the wing by persons who imagined it to be a wild Turkey. Pheasants and Black Grouse are numerous in the surrounding planta-



tions; but this was the only bird of the kind that had been observed.

In December 1837, Mr. John Leadbeater exhibited at the Zoological Society a male hybrid between the Pheasant and Black Grouse. It was observed that this was the third specimen which had been sent to the Society for exhibition within a comparatively short space of time. The first bird, from Cornwall, was more of a Grouse in appearance than a Pheasant; the second, Mr. Eyton's bird, from Shropshire, was more Pheasant-like; but the present bird was decidedly intermediate, exhibiting characters belonging to both. The head, neck, and breast were of a rich dark maroon colour, the feathers on the breast showing the darker crescentic tips; the upper part of the tarsi were covered with feathers; the back and wings mottled blackish grey, like that of a young Black Cock after his first moult, but with some indications of brown; the feathers of the tail rather short, but straight, pointed, graduated, and Pheasant-like. It was remarked that this bird more closely resembled the hybrid figured by White than either of the specimens previously exhibited. This bird was sent to Mr. Leadbeater to be preserved by order of the Duke of Northumberland; it was understood to have been killed near Alnwick, and it is now by the duke's liberality deposited in the British Museum.

Dr. Edward Moore, in his notes on the Birds of Devonshire, published in the Magazine of Natural History for the year 1837, says, that a hybrid of this kind was shot at Whidey, near Plymouth, by the Rev. Mr. Morshead. A male Pheasant, a female Grouse, and one young, had been observed in company for some time by the keeper. Mr. Morshead shot the Pheasant, and, in a few days, the young hybrid; but the Grouse escaped. The young bird bears the marks of both parents; but the most prominent characters are those of the Grouse. The space above the eye, however, is not bare, as in the Grouse, but entirely feathered, as in the Pheasant; the whole of the neck is covered with black feathers, somewhat mottled; the tail is not forked, but fan-shaped, and half as long as that of the Pheasant; the tarsi are bare, as in the Pheasant; the colour is generally, except the neck, that of the Pheasant; but it has the white spot on the shoulders, as in the Grouse. I am indebted to the Rev. W. S. Hore, of Stoke, near Devonport, for the knowledge of two other specimens, killed in Devonshire; one, a fine male, in his own collection, the other believed to be at this time in the collection of Dr. Rodd, of Trebartha Hall, in Cornwall.



The last of thirteen examples of hybrids between the Pheasant and Black Grouse, here recorded, was killed in Northumberland, for a knowledge of which I am indebted to the kindness of Mr. Selby, of Twizell House. This bird was shot early in December 1839, by Lord Howick, in a large wood belonging to Earl Grey, a few miles to the east of Felton, and, having been sent to Twizell, I was not only immediately made acquainted with the occurrence, but Mr. Selby has since supplied me with a coloured drawing of the bird, from which the representation at page 347 was executed.

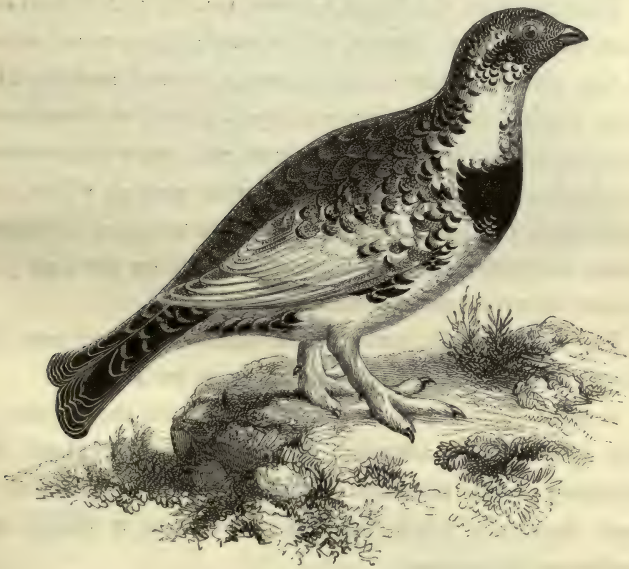
Hybrids between the Black and the Red Grouse have been suspected, and in many parts of this country both species inhabit the same ground; but such a union is less likely to happen with species that pair in their season, as do the Red Grouse, than with those which, like the Pheasant, the Capercaillie, and the Black Grouse, do not pair. Mr. Macgillivray, in the first volume of his History of British Birds, Indigenous and Migratory, page 162, has, however, mentioned three, describing in detail one bird supposed to have been thus produced. This bird is, I believe, in the collection at the Edinburgh Museum.

In Sweden there are two species of Ptarmigan; one of them identical with the Ptarmigan of this country, inhabits the mountains, and is called by M. Nilsson, in consequence, *alpina*: the other, a larger bird, which inhabits the plains and valleys, is called by M. Nilsson *subalpina*. With this latter species hybrids have been produced with the Black Grouse, but these seem to be exceedingly rare. M. Nilsson appears to have seen five examples, one of which being figured in his coloured illustrations of the Fauna of Scandinavia, I am enabled to insert a representation of this prettily-marked bird. In a letter lately received from T.

Macpherson Grant, Esq., of Edinburgh, that gentleman says, "When in Norway last summer, I saw, preserved at Christiana, several specimens of hybrids between the Black Cock and the Capercailzie, a circumstance said to be of not very uncommon occurrence. I saw also in Mr. Eskmark's collection a specimen of hybrid betwixt the Black Cock and the Ptarmigan, but which he told me was extremely rare."

M. Nilsson mentions an instance where the Black Cock had been known to breed with the Barn-door Fowl, but the chicks, very unfortunately, only lived a few days.

In the adult male the beak is black; the irides dark brown; semilunar patch of naked skin over the eye bright scarlet; the feathers of the head, neck, back, wing-coverts, rump, and tail, black; those of the neck and back margined with shining bluish black; the primary quill-feathers black, with white shafts; the secondaries and tertials black



at the end, but white at the base, forming a conspicuous white bar below the ends of the great wing-coverts, which, with the lesser coverts, are black; the feathers of the spurious wing with white spots at the base; tail of eighteen black feathers, of which three, four, and sometimes five of those on the outside are elongated, and curve outwards; the others nearly equal in length, and square at the end: the chin, neck, breast, belly, and flanks, black; under wing-coverts, axillary plume, and under tail-coverts, pure white; vent, thighs, and legs, mixed black and white; toes and claws blackish brown.

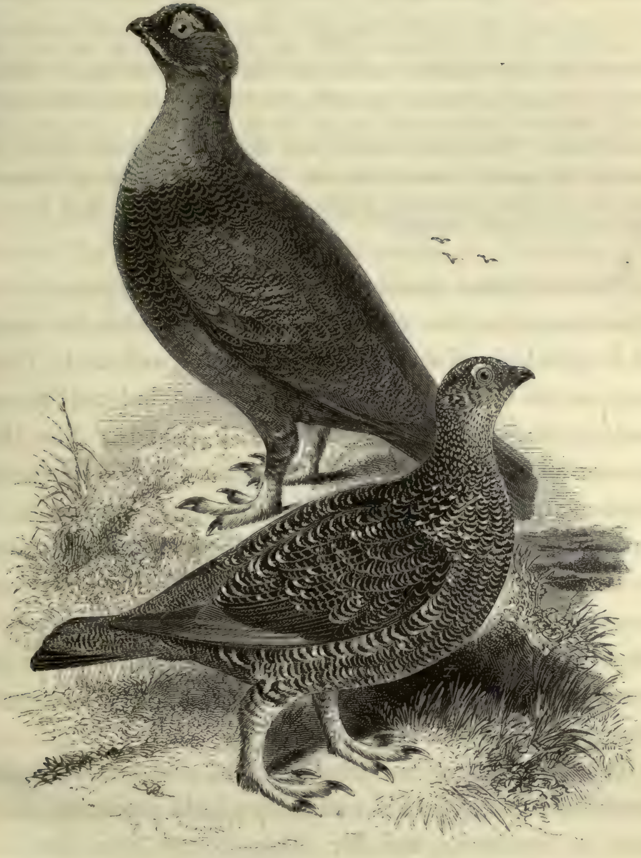
The whole length twenty-two inches. From the carpal joint to the end of the wing, ten inches and a half: the form of the wing rounded; the first quill-feather about as long as the seventh, the second about as long as the sixth, the fourth rather longer than the third or the fifth, and the longest in the wing.

The female of the Black Grouse, usually called the Grey Hen, has the beak brown, irides hazel; the general colour of the plumage pale chestnut brown, barred and freckled with black; the dark bars and spots larger, and most conspicuous on the breast, back, wings, and upper tail-coverts; the feathers of the breast edged with greyish white, particularly in old birds, and in those from northern latitudes; under tail-coverts nearly white; feathers on the legs pale yellow brown; toes and claws brown.

The whole length, seventeen to eighteen inches; from the carpal joint to the end of the wing, nine inches.

Several instances have occurred in which the females of this species have assumed, to a considerable extent, the colouring of the plumage of the male, the intermixture of some decidedly black feathers gives them a varied and handsome appearance.

RASORES. *TETRAONIDÆ.*



THE RED GROUSE.

Lagopus scoticus.

Tetrao Scoticus,	*Red Grouse,*	**Penn.** Brit. Zool. vol. i. p. 356.
,, *lagopus,*	,, ,,	**Montagu,** Ornith. Dict.
,, *Scoticus,*	,, ,,	**Bewick,** Brit. Birds, vol. i p. 351.
,, ,,	,, ,,	**Flem.** Brit. An. p. 43.

Lagopus Scoticus,	*Red Grouse, Ptarmigan,*	SELBY, Brit. Ornith. vol. i. p. 427.
Tetrao „	„ *Ptarmigan,*	JENYNS, Man. Brit. Vert. p. 170.
Lagopus „	„ *Grouse,*	GOULD, Birds of Europe, pt. xv.
Tetrao „	*Tetras rouge,*	TEMM. Man. d'Ornith. vol. ii. p. 465.

LAGOPUS. *Generic Characters.*—Bill very short, clothed at the base with feathers; the upper mandible convex, and bent down at the point. Nostrils basal, lateral, partly closed by an arched membrane, and nearly hidden by the small closely-set feathers at the base of the bill. Eyebrows naked, as in the genus *Tetrao.* Wings short, concave, with the third and fourth feathers the longest. Tail generally square at the end. Tarsi and toes completely feathered; hind toe very short, and barely touching the ground with the tip of the nail. Nails long, and nearly straight.

THIS handsome species ought to have been named *Britannicus,* rather than *Scoticus,* since it is found in the north of England, in Wales, and in Ireland, as well as in Scotland, in the Hebrides, and in the Orkneys, but not in any part of the world except the British Islands. The Red Grouse and the Ptarmigan differ from the two species of Grouse already described here, in pairing constantly, in having the toes feathered down to the roots of the claws, in having also a double moult, and neither of them are seen to perch on trees; I have therefore followed the example of M. Vieillot and others in considering them so far removed from the genus *Tetrao* as to be entitled to a separate generic distinction.

The Red Grouse are inhabitants of wild and extensive heaths and moors. It is well known to be especially abundant in Scotland; and Mr. Macgillivray says that the "low sandy heaths of the eastern counties of the middle division appear to be less favourable to it than the more moist peaty tracts of the western and northern districts, where the shrubs on which it feeds attain a greater size. In the central and desolate regions of the Grampians it is equally abundant, as on the moors of the Hebrides; and on the hilly ranges of the south, the Pentlands, the Lammermuir, and the mountains of Peebles, Dumfries, and Selkirk, it is still plentiful."

The Red Grouse pair very early in spring, and the female soon goes to nest: this is formed of the stems of ling and grass, with occasionally a very few feathers, and these materials are slightly arranged in a depression on the ground, under shelter of a tuft of heather. Daniel, in his Rural Sports, says, that "on the 5th of March 1794, the gamekeeper of Mr. Lister (now Lord Ribblesdale) of Gisburne Park, discovered on the manor of Twitten, near Pendle Hill, a brood of Red Grouse, seemingly about ten days old, and which could fly about as many yards at a time; this was an occurrence never known to have happened before so early in the year." T. H. Sanderson, Esq. also sent me word, in reference to early breeding, that a farmer in burning ling off Shap Fell, burnt over a nest containing fifteen eggs on the twenty-fifth of March 1835. The eggs are from eight to fourteen or fifteen in number, of a reddish white ground colour, nearly covered with blotches and spots of umber brown: the length of the egg one inch nine lines, and one inch three lines in breadth. The female sits very close; and Mr. Salmon mentions that one allowed him to take her off her eggs. The young brood leave the nest soon after they are freed from the shell, and are attended to by both the parent birds, under whose example they learn to feed on the various vegetable substances by which they are surrounded. The extreme ends of the common ling and fine-leaved heather, with the leaves and berries of the black and red wortle, and crowberry, and occasionally oats, when grown at the moor side, are the portions and kinds of food most frequently found in their crops.

The quantity of Red Grouse supplied to the London market only, could the number be ascertained, must be enormous, when it is considered that from the second week in August up to the present time, the end of the first week in March, of every year, the supply is large and constant. The females of the Red Grouse now to be seen in the shops of the London poulterers, March 7th, 1840, have begun to assume the plumage peculiar to the breeding-season. These have been killed very recently, and I have observed within the last three years, that a considerable portion of the birds I have examined bore no marks of having been shot, and have probably been caught by sliding loops of horse hair set up across their paths or runs in the heather.

It has been observed that it seems almost marvellous that a species which furnishes sport to so many, and to such an extent, besides those taken clandestinely, should continue to exist in such quantities in the country. The Earl of Strathmore's gamekeeper was matched for a considerable sum to shoot forty brace of moor game in the course of the 12th of August, upon his lordship's moors in Yorkshire: he performed it with great ease, shooting forty-three brace by two o'clock; at eight in the morning, owing to a thick fog, he had only killed three birds, and the odds ran much against him; however, the day cleared up by eleven, and the work of slaughter went on rapidly.

In 1801, a gentleman in Inverness-shire, shot fifty-two brace of moor-game in one day, never killing a bird sitting, or more than one bird at one shot. At the first of the season the young birds lie close, particularly where the heath is high and strong, affording excellent sport after a favourable breeding-season, and the newspapers frequently record the great numbers killed by parties that are favourably located; but as the season advances, the birds get strong, and from being disturbed, become wild, and the families uniting to form packs, are then very difficult to get shots at.

Among the quantities of Red Grouse received in London, considerable differences in the colour of the plumage are obvious, and a difference also in weight is considered to be peculiar to the birds of particular districts.

The Red Grouse of North Wales are said to be large in size, and light in colour: those of the Western Highlands are also light in colour, and are said to be earlier breeders than those of the eastern parts of Scotland, which are, however, of large size, and dark in colour. I have been favoured with the weight of four male and two female Red Grouse from Morayshire, not selected because considered as particularly large, but it happens to be a practice with the keeper. The four males weighed respectively $24\frac{3}{4}$ ounces, $24\frac{3}{4}$ ounces, $24\frac{1}{2}$ ounces, and 24 ounces, thus averaging $24\frac{1}{2}$ ounces. Of the two females, one weighed $24\frac{1}{4}$ ounces, the other $23\frac{1}{4}$ ounces; and in this locality the birds are very dark in colour.

In further reference to colour, Mr. Selby, residing in Northumberland, observes, that "varieties of a cream colour, or with different degrees of white, are often met with; and there has for many years existed on the moors of Blanchland, in the county of Durham, a cream-coloured, or light grey variety, spotted more or less with dark brown and black; but, from the anxiety of sportsmen to procure specimens, these birds have not been allowed to increase, as they otherwise, in all probability, would have done."

The Red Grouse of Yorkshire are said to be the smallest in size; and this difference is most observable when the birds are picked and trussed for roasting; yet Daniel, in his Rural Sports, records one that was killed near Richmond in Yorkshire, which weighed twenty-five ounces;

and Pennant. in a note, mentions that he had heard of one killed in Yorkshire which weighed twenty-nine ounces.

The Red Grouse is found in Lancashire and Derbyshire, and as far south as the heaths of Staffordshire. Montagu mentions one instance "of this bird being found at a distance from the moors. This was a female, taken alive near Wedhampton in Wiltshire, in the winter of 1794; the occurrence was communicated to him by Edward Poore, Esq., who showed him part of the bird. By what unaccountable accident," Montagu observes, "it should have been driven to so great a distance from its native moors is difficult to be assigned, as the nearest place they are known to inhabit is the south of Wales; a distance, in a straight line, not less than sixty miles."

The Red Grouse, like the Capercaillie and the Black Grouse, will live and breed in confinement, and some that I have seen have become remarkably tame.

Daniel mentions that they "had been known to breed in the menagerie of the late Duchess-dowager of Portland, and that this was in some measure effected by her Grace's causing fresh pots of ling or heath to be placed in the menagerie almost every day. At Mr. Grierson's, Rathfarnham House, County of Dublin, in the season of 1802, a brace of Grouse, which had been kept for three years, hatched a brood of young ones. In 1809, Mr. William Routledge, of Oakshaw, in Bewcastle, Cumberland, had in his possession a pair of Red Grouse, completely domesticated; and which had so far forgotten their natural food, as to prefer corn and crumbs of bread, to the tops and seeds of heath. The hen laid twelve eggs, but from some cause was not suffered to hatch them; or, in all probability, the young brood would have been equally as tame as their parents."

In 1811, a pair of Red Grouse bred in the aviary at Knowsley; the female laid ten eggs, and hatched out eight young birds; but these, from some unknown cause, did not live many days. Earl Derby, then Lord Stanley, also communicated to Colonel Montagu the occurrence of a mottled brown and white variety of the Red Grouse, very much resembling the Ptarmigan when in its summer plumage, which was shot in Lancashire in the month of August.

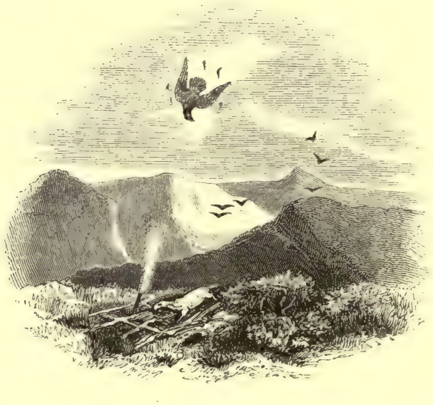
A male bird of the year, killed in December, has the beak black; the irides hazel, with a crescentic patch of vermilion red skin over the eye, fringed at its upper free edge; head and neck reddish brown, but more rufous than any other part of the bird; back, wing, and tail-coverts, chestnut brown, barred transversely and speckled with black; distributed among the plumage are several feathers in which the ground colour is of a bright yellowish brown; all the quill-feathers dark umber brown; the secondaries and the tertials edged on the outside, and freckled with lighter brown; the tail of eighteen feathers; the seven on each outside dark umber brown; the four middle feathers chestnut brown, varied with black. On the breast the plumage is darker than on the sides, almost black, and tipped with white; the chestnut brown feathers on the sides, flanks, belly, vent, and under tail-coverts tipped with white; legs and toes covered with short greyish white feathers; claws long, bluish-horn colour at the base, nearly white at the end.

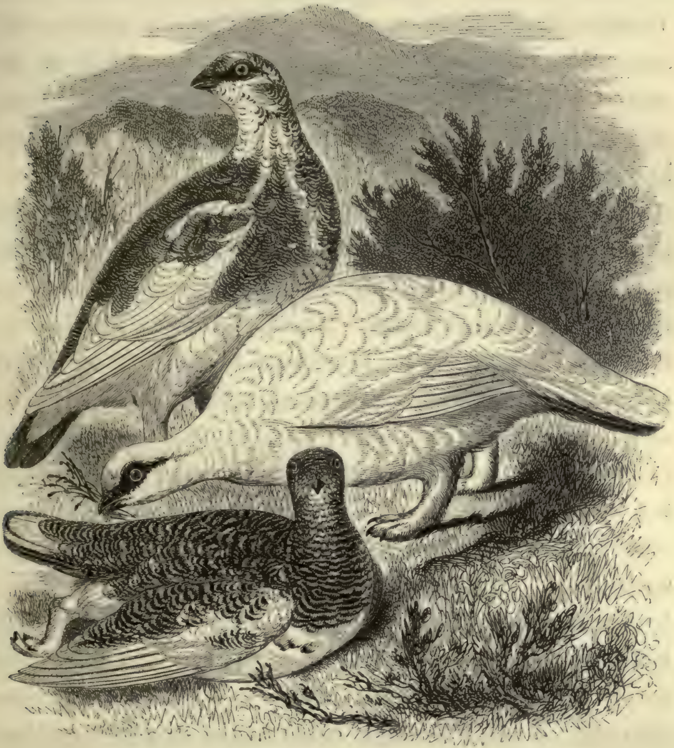
The whole length sixteen inches. From the carpal joint to the end of the wing, eight inches and three-eighths: the first quill-feather shorter than the sixth, but longer than the seventh; the second shorter than the fifth, but longer than the sixth; the third and fourth nearly equal in length, and the longest in the wing.

The old male in summer has many of the body feathers tipped with yellow, and the red colour is of a lighter tint.

The female is rather smaller than the male; the patch of red skin over the eye is also smaller; the red and brown tints of the feathers are lighter in colour, and give a more variegated appearance to the plumage generally. In her summer plumage all the feathers of the head and upper part of the neck, are yellowish chestnut, with a few black spots: those of the lower neck, breast, back, wing, and tail-coverts, and middle tail-feathers, transversely barred with black, and tipped with yellow; the long feathers on the sides and flanks also barred across with black and yellow, very much resembling the feathers borne on the same parts at the same season by the female Ptarmigan, showing its affinity to that bird: and some authors have called our Red Grouse, the Red Grouse Ptarmigan, the Red Ptarmigan, and the Brown Ptarmigan.

The vignette represents a mode of shooting an Eagle from a pit.





THE PTARMIGAN.

Lagopus vulgaris.

Tetrao lagopus,	*The Ptarmigan,*	**Penn.** Brit. Zool. vol. i. p. 359.
" "	" "	**Montagu**, Ornith. Dict.
" "	*White Grouse,*	**Bewick**, Brit. Birds, vol. i. p. 353.
Lagopus vulgaris,	*The Ptarmigan,*	**Flem.** Brit. An. p. 43.
" *mutus,*	*Common* "	**Selby**, Brit. Ornith. vol. i. p. 430.
Tetrao lagopus,	" "	**Jenyns**, Brit. Vert. p. 170.
Lagopus mutus,	" "	**Gould**, Birds of Europe, pt. xi.
Tetrao lagopus,	*Tetras Ptarmigan,*	**Temm.** Man. d'Ornith. vol. ii. p. 468.

The Ptarmigan is the smallest in size of the British Grouse; and though considered to have been formerly an inhabitant of the mountain ridges of Cumberland and Westmoreland, it is now only found as a British bird among the grey rocks on the highest ranges of hills in the central and northern parts of Scotland, in the Hebrides, and in the Orkneys. It was not met with by Mr. Dunn in Shetland.

The name of Ptarmigan is but a slight modification of the Gaelic word, *Tarmachan.* This Grouse is not found now in any part of Ireland, not even in the north, where it might have been expected. The Red Grouse, as I am informed by Mr. William Thompson, is the only species of Grouse now to be found in Ireland, where it inhabits most of the suitable localities.

The Ptarmigan pairs early in spring, and lays eight or ten eggs, frequently on the bare ground, among stones. The eggs are yellowish white, sparingly blotched and spotted with dark brown; the length one inch eight lines, by one inch two lines in breadth. The food of these birds is the various sorts of alpine berries, seeds, and the tender shoots of alpine plants. Mr. Selby says, the note, or common call, of the Ptarmigan is not unlike that of the Missel Thrush, but rather more harsh in sound. Mr. Macgillivray compares the sound of the Ptarmigan's voice to the croak of a frog. At the commencement of the shooting season, the broods, or small families, go together; and Mr. Gould has very justly observed, that the mountain Ptarmigans are less wary and shy in their disposition than the other Grouse,—doubtless in consequence of being less disturbed by man, against whom the elevated regions they inhabit present an obstacle of too formidable a nature to be often encountered. Pennant and others have said that they are very silly birds, so tame as to bear driving like poultry, and if provoked to rise, take very short flights. The only preservative, says a sporting friend to the late Rev. Mr. Daniel, that nature seems to have afforded them, is their alighting upon stones so exactly of their own colour, as to render it difficult for the eye to discern them. This sportsman killed forty-three Ptarmigan in one day above Loch Laggan, which lies between Dalwinnie and Fort Augustus in this district; but as the season advances, and the ground becomes wet and cold, they are much more difficult to approach. Mr. Macgillivray also observes, that "these beautiful birds while feeding run and walk among the weather-beaten and lichen-crested fragments of rock, from which it is very difficult to distinguish them when they remain motionless, as they invariably do should a person be in sight. Indeed, unless you are directed to a particular spot by their strange low croaking cry, you may pass through a flock of Ptarmigans without observing a single individual, although some of them may not be ten yards distant. When squatted, however, they utter no sound, their object being to conceal themselves; and if you discover the one from which the cry has proceeded, you generally find him on the top of a stone, ready to spring off the moment you show an indication of hostility. If you throw a stone at him, he rises, utters his call, and is immediately joined by all the individuals around, which, to your surprise, if it be your first rencontre, you see spring up one by one from the bare ground. They generally fly off in a loose body, with a direct and moderately rapid flight, resembling, but lighter than that of the Red Grouse, and settle on a distant part of the mountain, or betake themselves to one of the neighbouring summits, perhaps more than a mile distant. In winter several families of Ptarmigan associate, forming a flock, and fifty in number have been seen together."

Our Ptarmigan is found on most of the elevated mountain ranges of the continent of Europe, even to Italy. In Spain it is found about the high rocky country of Aragon, where it is called *Perdiz blanca.* It is found in Russia, and nearly all over Scandinavia and its islands. By the parties employed on the various Northern expeditions which have been sent out from this country, these birds were found at Greenland; on the west side of Baffin's Bay; in the country south of Barrow's Strait; and on the east of Prince Regent's Inlet; on Melville Peninsula; at Port Bowen; and, on the last voyage, one pair were seen on the east side of the Peninsula of Boothia, latitude 71° nearly, and three or four more were seen at Felix Harbour; it is also an inhabitant of the northern part of North America.

It is, however, nowhere more plentiful, according to Mr. Lloyd, than over all the more northern parts of Scandinavia. "Their usual resorts are the Fyalls, or lofty mountains, whose summits are destitute of trees; but during heavy snow storms these birds not unfrequently descend to the low country. This has occasionally happened in some of the Norwegian valleys, at which time they have been seen perched in such numbers in the birch trees, that the latter seemed to be altogether clothed in white." I have mentioned that Scandinavia produces a second species of Ptarmigan, besides that which is identical with our own Scottish bird. This second species is the *L. saliceti*, or Willow Ptarmigan, of some authors, the *L. subalpina* and Dal-ripa of M. Nilsson, the Swedish naturalist, and is a bird of larger size than the other, which, as before mentioned, is called by M. Nilsson *L. alpina*, on account of its generally inhabiting a higher range of ground. Linnæus met with both these species when on his Lapland Tour, and under date of July 30th, says, "The little Alpine variety of the Ptarmigan was now accompanied by its young. I caught one of these, upon which the hen ran so close to me, that I could easily have taken her also. She kept continually jumping round and round me; but I thought it a pity to deprive the tender brood of their mother, neither would my compassion for the mother allow me long to detain her offspring, which I restored to her in safety."—(*Vol.* i. p. 291.) The mode of catching the Ptarmigan is thus described, at page 319:—"They take a little forked birch twig, about a span long, which is stuck into the snow perpendicularly by its divided end, forming a sort of arch. A snare, or noose, made of packthread or horsehair, is then fixed to the twig by one end, and placed in the open space between the forks. The thin curling bark of the twig, being carefully slit down at the outer side, curls inward, and serves both to confine and conceal the snare, by drawing it close to the branch on the inner side. Such traps as these are ranged in a line, about a fathom from each other, in the birch thickets, brushwood being laid from one to another, so as to form a low fence. Now as the Ptarmigans come running along, for they seldom fly, they have no way to go but through these snares, and forty or fifty of them are frequently caught at a time." Whether this precise mode is still practised, I am unable to state, but I have more than once found the hair-noose round the neck of Norway Ptarmigan in the London market, and others have done the same. T. M. Grant, Esq. of Edinburgh, who has been in Norway, and has supplied me with many interesting notes, says the Ptarmigan are all taken in snares made of horse-hair, set, be believes, amongst the twigs of a skreen of bushes, erected above the surface of the snow. Mr. Lloyd says, one peasant will set from five hundred to a thousand of these snares. This is done in the winter season; the birds are kept in a frozen state until the arrival of the dealers who make it a trade to purchase up game: a single dealer will sometimes purchase and dispose of fifty thousand Ptarmigan in the course of the season. Sir Arthur de Capell Brooke calculated that, in one large parish in Lapland, sixty thousand birds were killed in one winter. Mr. Grant says, I was assured, when in Norway, that the number of Ptarmigan killed in that country every winter, was beyond belief: two thousand dozen was, if I remember right, the quantity exported from Drammen in one ship for England last year; and great numbers are annually sent to the Copenhagen market. Besides those received in this country from Drammen, great quantities are also received in London during the months of February, March, April, and May, from Bergen, Drontheim, and other portions of the west coast of Norway, from whence conveyance is obtained for them in the boats which bring constant supplies of lobsters to the London market. On one occasion, late in the spring of 1839, one party shipped six thousand Ptarmigan for London; two thousand for Hull; and two thousand for Liverpool; and at the end of February, or very early in March, of the present year, 1840, one salesman in Leadenhall Market received fifteen thousand Ptarmigan that had been consigned to him; and during the same week another salesman received seven hundred Capercaillies, and five hundred and sixty Black Grouse. The prices of these birds in the market of Drammen, as supplied me by Mr. Grant, are in English money for—

	s.	d.
A Capercaillie male, about	2	0
„ female	1	2
A Black Grouse, male	0	8
A Grey Hen,—the female	0	6
A Ptarmigan	0	4

In London the usual price for these birds, when in good condition, is, for—

	s.	d.
A Capercaillie male	10	0
„ female	7	0
A Black Grouse, male or female	3	6
A Ptarmigan	2	0

Of the various species of Grouse, as articles of food, the flesh of the Red Grouse has perhaps the most admirers. The Black Grouse is remarkable for the dark colour of the outer muscle of the breast, as contrasted with the very white colour of the inner muscle, and all the Grouse are considered to possess fine qualities for the table by those who are partial to high game flavour.

The Ptarmigan of the mountain ridges of Norway and Sweden, called the Fyall-ripa, the species named *alpina* by M. Nilsson, is considered to be identical with our Scottish Ptarmigan. Mr. Lloyd says, "The predominant colours of the Fyall-ripa in the summer season are speckled black, brown, or grey; there is, however, a very great dissimilarity in the dress of the male and female; the former being of a much darker colour than the latter." This agrees with the descriptions of our Ptarmigan, as given by those authors who have had the best opportunities of obtaining specimens of these birds at different seasons of the year.

The male in winter has the beak, the lore, and a small angular patch behind the eye, black; the irides yellowish brown; over the eye a naked red skin; almost all the plumage pure white; shafts of the primary quill-feathers black; the four upper tail-feathers white; the fourteen other tail-feathers black, tipped with white; legs and toes white, the claws black. The male in May and November has the beak, the lore, and the space behind the eye, black; over the eye a naked red skin; the throat white; head and neck mottled with blackish and speckled grey feathers, a few others with narrow bars of black and ochreous yellow; the white feathers assuming the greyish black by a change of the colour, as particularly observed in progress in a male bird in March, when pen feathers, which were then growing, were all greyish black; the breast, back, and upper tail-feathers, nearly uniform speckled grey; the fourteen under tail-feathers black; the wings, the under surface of the body, and the legs, white.

The whole length of a male fifteen inches and a quarter. From the carpal joint to the end of the wing, eight inches: the first quill-feather an inch and a half shorter than the second; the second rather longer than the fifth; the third and fourth nearly equal in length, and the longest in the wing. The wings of the bird killed in autumn are seldom perfect, as this is the season for moulting the flight feathers.

The female is smaller than the male, and is pure white in winter, like the male already described, except that she has no short black feathers before or behind the eye. By the end of April the female has assumed almost as much mixture of feather, barred black and ochreous yellow, with white tips, as the male bird has of those which are grey; a female bird from Scotland, bought in the London market during the second week in May, 1839, is much farther advanced, having the whole of the head, neck, back, rump, upper tail-coverts, upper part of the breast and sides, covered with feathers of greyish black and yellow in bars, many of them still retaining the white tips; in the course of the summer these yellow or very pale chestnut-coloured feathers, barred with greyish black, pervade the breast, sides, and flanks, very similar to those already described, as forming part of the summer plumage of the Red Grouse. By the beginning of September, the upper surface of the body has become freckled grey, like that of the male, but with a few yellow feathers remaining; the under surface of the body with some grey feathers among the yellow ones; the quill-feathers, and some of the wing-coverts, with those on the middle line of the belly, white; as the autumn advances the yellow-coloured feathers are first lost, afterwards those which are grey, leaving the bird wholly white.

The length of the female fourteen inches and a half. From the carpal joint to the end of the wing seven inches and a half.

Mr. Macgillivray says, "The young are at first covered with a light yellowish grey down, patched on the back with brown, and having on the top of the head a light chestnut mark, edged with darker. When first fledged they are very similar to the young of the Red Grouse, but banded and spotted with brighter reddish yellow. This plumage soon changes, so that in the beginning of August many of the yellow and brown feathers of the back are exchanged for others spotted and barred with pale grey and brown, and the under parts are white, as well as the wings. These young birds become white the first winter, like older ones."

The Ptarmigan, Mr. Selby observes, has been reared in confinement without much difficulty, and has been known to breed in a tame state.

A few particulars of two other species of Ptarmigan, both of which are closely allied to our own, may not be out of place here.

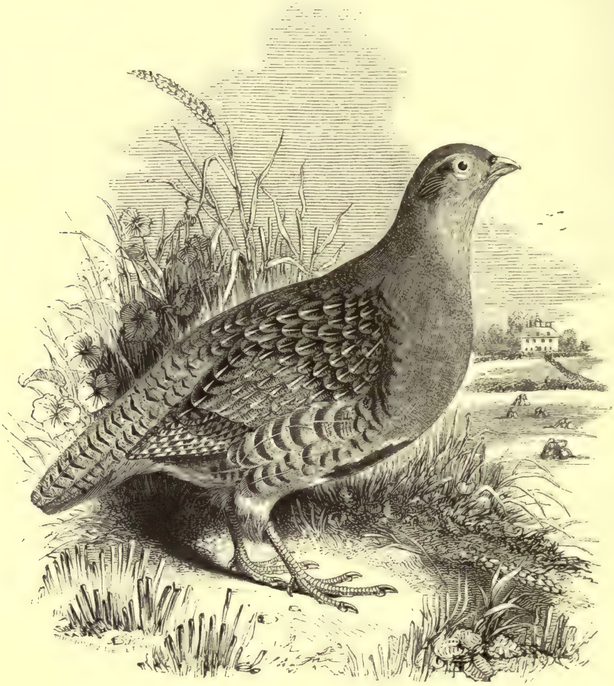
The Dal-ripa of Scandinavia, the *subalpina* of M. Nilsson, the *saliceti* of M. Temminck, and the Willow Grouse of English authors, is pure white in winter, except the shafts of the quill-feathers and the lower series of tail-feathers, which are black; the latter broadly tipped with white; the male has no black feathers before or behind the eye: it is further distinguished from our Ptarmigan by its larger size, and much stouter beak. In summer both sexes assume a reddish yellow plumage, somewhat resembling that of the Red Grouse, the quill-feathers and part of the under surface of the body remaining white; the claws black at the base, white at the end. The male measures seventeen inches in length: the wing eight inches and one quarter. The female measures sixteen inches, and her wing eight inches. This species is abundant in the countries about Hudson's Bay, where ten thousand have been taken in one winter. A coloured figure of this bird in its summer plumage will be found at page 72 of Edwards' Gleanings in Natural History, and in Mr. Gould's Birds of Europe.

Mr. Lloyd says that M. Nilsson considers the Scandinavian Fyall-ripa identical with our Ptarmigan, to be the same bird described by Faber as common to Iceland; but with two specimens of the Iceland bird before me, obtained from Mr. Procter of the Durham Museum, who brought them from Iceland himself, I am induced to think Faber was correct in considering the Ptarmigan of Iceland distinct, and naming it accordingly *Islandorum.* Both the specimens I possess are males, one in winter plumage, the other killed in spring, and exhibiting a portion of the plumage of summer. Both these birds have black feathers before and behind the eye, and by this mark are distinguished from the Willow Bird ; both these birds measure seventeen inches in length, and are therefore as large as the largest males of the Willow Bird; the beak is equally bulky, and the colour of the summer plumage in the spring-killed specimen, as far as at present obtained, does not agree with that of either the male or female of our *Lagopus mutus.*

I believe, with M. Temminck and Mr. Henry Doubleday, that the Ptarmigan figured by Mr. Gould and Mr. Eyton under the name of *rupestris*, is only the female of our common Ptarmigan in her summer plumage.

In our three representations of the Ptarmigan, at the head of this subject, the lower figure is taken from a female killed in the month of May, the upper figure from a male killed in October, and the middle figure from a male bird killed in January.

RASORES. *TETRAONIDÆ.*



THE COMMON PARTRIDGE.

Perdix cinerea.

Perdix cinerea,	*Common Partridge,*		**Penn.** Brit. Zool. vol. i. p. 363.
” ”	”	”	**Montagu**, Ornith. Dict.
Tetrao perdix,	*The*	”	**Bewick**, Brit. Birds, vol. i. p. 358.
Perdix cinerea,	”	”	**Flem.** Brit. An. p. 44.
” ”	*Common*	”	**Selby**, Brit. Ornith. vol. i. p. 433.
” ”	”	”	**Jenyns**, Brit. Vert. p. 172.
” ”	”	”	**Gould**, Birds of Europe, pt. xxi.
” ”	*Perdrix grise,*		**Temm.** Man. d'Ornith. vol. ii. p. 488.

Perdix. *Generic Characters.*—Bill short, strong, naked at the base; upper mandible convex, deflected towards the tip. Nostrils basal, lateral, the orifice partly concealed by an arched naked scale. Wings short, concave, rounded in form; the first three feathers shorter than the fourth or fifth, which are the longest in the wing. Tail, of fourteen to eighteen feathers, short. Feet, with three toes in front, and one behind, those in front united by a membrane as far as the first articulation.

The enlarged demands of an increasing population, tempting prices in seasons of scarcity, or the progress of science unfolding the nature of soils, have each in turn induced the cultivation of various tracts of ground unploughed before; and as the labours of the agriculturists encroach upon the boundaries of the moor, the Grouse retires, and the Partridge takes its place upon the land: the districts best cultivated, and producing the most corn, frequently also producing the greatest number of Partridges.

Of a bird so universally known, little that is new can be said; with its appearance and its habits almost all are familiar. These birds pair in February; but seldom begin to lay eggs till towards the end of April or the beginning of May: a slight depression in the ground, with a few dead leaves or dried grass bents scratched together, serves for a nest; and the place chosen is sometimes only a few yards from a public footpath. Occasionally, also, the nest of a Partridge is found in a situation the least likely to be occupied by a bird so decidedly terrestrial in its habits. In Daniel's Rural Sports, it is recorded that a Partridge made her nest on the top of an oak pollard; and this tree had one end of the bars of a stile, where there was a foot-path, fastened into it, and by the passengers going over the stile before she sat close, she was disturbed, and first discovered. She there hatched sixteen eggs; and her brood, scrambling down the short and rough boughs which grew out all round from the trunk of the tree, reached the ground in safety. The eggs of the Partridge are, however, mostly deposited among brushwood or long grass, or in fields of clover and standing corn; they are of a uniform olive brown colour, one inch five lines in length, by one inch and half a line in breadth, and from twelve to twenty are produced by one female. Twenty-eight eggs in one instance, and thirty-three eggs in two other instances, are recorded as having been found in one nest; but there is little doubt in these cases, that more than one bird had laid eggs in the same nest. In one of the instances recorded, in which the nest, with thirty-three eggs, was in a fallow field, twenty-three young birds were hatched out and went off with the old ones, and four of the eggs left behind had live birds in them. The attachment of Partridges to their eggs and young is proverbial. Montagu mentions an instance in which a Partridge, on the point of hatching, was taken, together with her eggs, and carried in a hat to some distance; she continued to sit, and brought out her young. Mr. Jesse mentions two cases: "A farmer discovered a Partridge sitting on its eggs in a grass-field. The bird allowed him to pass his hand frequently down its back without moving, or showing any fear; but if he offered to touch the eggs, the poor bird immediately pecked his hand. A gentleman living near Spilsby, in Lincolnshire, was one day riding over his farm and superintending his ploughmen, who were ploughing a piece of fallow land. He saw a Partridge glide off her nest so near the foot of one of his plough-horses, that he thought the eggs must be crushed; this, however, was not the case; but he found that the old bird was on the point of hatching, as several of the eggs were beginning to chip. He saw the old bird return to her nest the instant he left the spot. It was evident that the next round of the plough must bury the eggs and nest in the furrow. His surprise was great when, returning with the plough, he came to the spot, and saw the nest indeed, but the eggs and bird were gone. An idea struck him that she had removed her eggs; and he found her, before he left the field, sitting under the hedge upon twenty-one eggs, and she brought off nineteen birds. The round of ploughing had occupied about twenty minutes, in which time she, probably assisted by the cockbird, had removed the twenty-one eggs to a distance of about forty yards."

Incubation with the Partridge lasts twenty-one days, and the great hatching-time in the southern parts of England is from the twentieth of June till the end of that month. Mr. Selby observers, that "as soon as the young are excluded, the male bird joins the covey, and displays equal anxiety with the female for their support and defence. There are few persons conversant with country affairs who have not witnessed the confusion produced in a brood of young Partridges by any sudden alarm; or who have not admired the stratagems to which the parent birds have recourse, in order to deceive and draw off the intruder. Their parental instinct, indeed, is not always confined to mere devices for engaging attention; but where there exists a probability of success, they will fight obstinately for the preservation of their young, as appear from many instances already narrated by different writers, and to which the following may be added, for the truth of which I can vouch:—A person engaged in a field, not far from my residence, had his attention arrested by some objects on the ground, which, upon approaching, he found to be two Partridges, a male and female, engaged in battle with a Carrion Crow; so successful and so absorbed were they in the issue of the contest, that they actually held the Crow till it was seized and taken from them by the spectator of the scene. Upon search, the young birds, very lately hatched, were found concealed amongst the grass. It would appear, therefore, that the Crow, a mortal enemy to all kinds of young game, in attempting to carry off one of these, had been attacked by the parent birds, and with this singular result. Markwick says he has seen, when a Kite has been hovering over a covey of young Partridges, the old birds fly up to the Kite, screaming and fighting with all their might to preserve their brood. Their desire to go to nest, and their partiality to a young brood, is sometimes shown in another manner. In 1808, at Mark's Hall, in Essex, Payne the gamekeeper noticed a brace of Partridges, whose nest had been destroyed, taking to a nest of Pheasant's eggs, the hen of which had been killed by accident. The Partridges hatched and brought up ten young Pheasants. The keeper frequently showed his master, Colonel Burgoyne, and others, the old Partridges with the young Pheasants, at different periods of their growth.*

During the day a covey of Partridges, keeping together, are seldom seen on the wing, unless disturbed; they frequent grass fields, preferring the hedge sides, some of them picking up insects, and occasionally the green leaves of plants; others dusting themselves in any dry spot where the soil is loose, and this would seem to be a constant practice with them in dry weather, if we may judge by the numerous dusting-places, with the marks and feathers, to be found about their haunts; and sportsmen find in the early part of the shooting-season, that young and weak birds are frequently infested with numerous parasites. In the afternoon the covey repair to some neighbouring field of standing corn, or if that be cut, to the stubble, for the second daily meal of grain, and this completed, the call-note may be heard, according to White, as soon as the beetles begin to buzz, and the whole move away together to some spot where they jug, as it is called,—that is, squat and nestle close together for the night; and from the appearance of the mutings, or droppings, which are generally deposited in a circle of only a few inches in diameter, it would appear that the birds arrange themselves also in a circle, of which their tails form the centre, all the heads being outwards;—a disposition which instinct has suggested as the best for observing the approach of any of their numerous enemies, whatever may be the direction, and thus increase their security by enabling them to avoid a surprise. In the morning early they again visit the stubble for a breakfast, and pass the rest of the day as before. Fields of clover or turnips are very favourite places of resort during the day.

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* Daniel's Supplement, page 397.

Many Partridges are annually reared from eggs that are found, or mowed out in cutting clover or grass, these eggs being hatched under hens. The young birds should be fed with ants-eggs, curd, grits; small grain, when the birds are old enough, and some vegetables. Partridges thus hatched and reared become so tame as even to be troublesome, running close about the feet of those who are in the habit of supplying them several times daily with food; and though they live for years afterwards in an aviary, there is but one record, as far as I am aware, of the Partridge breeding in confinement; Sir Thomas Marion Wilson, Bart., had a small covey of seven or eight hatched and reared by the parent birds in his aviary at Charlton in the summer of 1842, I saw these birds in 1843. Dry summers are particularly favourable to the breeding of Partridges; White, in his History of Selborne, notes, that after the dry summers of 1740 and 1741, the Partidges swarmed to such a degree, that unreasonable sportsmen killed twenty, and sometimes thirty brace in a day. This, however, is but moderate sport to some that might be quoted. T. W. Coke, Esq., (the late Earl of Leicester) on the 7th of October, 1797, upon his manor at Warham, and within a mile's circumference, bagged forty brace of Partridges in eight hours, at ninety-three shots, every bird was killed singly; the day before, on the same ground, he killed twenty-two brace and a half in three hours.

A more recent match, as recorded in Pierce Egan's Anecdotes, and in the Naturalist's Library, affords still further proof of the abundance of the Partridge, and the excess to which the sport may be carried. This was a bet between Mr. William Coke and Lord Kennedy, for two hundred sovereigns a-side, play or pay, who shot and bagged the greatest number of Partridges in two days' sporting; both parties to shoot on the same days,—namely, the 26th of September and the 4th of October in the same season, 1823. Mr. William Coke to sport upon his uncle's manors in Norfolk, and Lord Kennedy in any part of Scotland he pleased. The result of Mr. Coke's first day's shooting was eighty and a half brace of birds bagged. On Saturday, October 4th, Mr. W. Coke took the field soon after six o'clock in the morning; he was accompanied by his uncle, T. W. Coke, Esq., M.P., and by two umpires—Colonel Dixon for Mr. Coke, and F. S. Blunt, Esq., for Lord Kennedy; also by two of his friends, Sir H. Goodricke, Bart., and F. Holyoake, Esq. He was attended by several gamekeepers, and by one dog only, to pick up the game. Several respectable neighbouring yeomen volunteered their labours in assisting to beat for game, and rendered essential service throughout the day. Mr. Coke sported over part of the Wigton and Egmere manors. The morning was foggy, and the turnips were so wet that the birds would not lie among them: very little execution was done, in consequence, in the early part of the day; in the first two hours only six brace of birds were bagged. The day cleared up after eight o'clock, and the sportsman amply made up for his lost time. He found birds plentiful among Mr. Denny's fine crop of turnips on the Egmere farm: and in a one and twenty acre piece of Swedes, he bagged thirty-five and a half brace of birds. He concluded his day's sport soon after six in the evening, and had then bagged eighty-eight brace of birds, and five Pheasants; but a dispute having arisen among the umpires about one bird, Colonel Dixon gave the point up, and the number was ultimately declared to be eighty-seven and a half brace of birds bagged, Pheasants and other game not being counted in the match; so that Mr. W. Coke's number of birds bagged in the two days' shooting was one hundred and sixty-eight brace. He had much fewer shots on the second than on the first day, but he shot better; on the Saturday he bagged one hundred and eighty head from three hundred and twenty-seven shots, which was considered good shooting in a match of this nature, when a chance, however desperate it may appear, is not to be thrown away. His uncle, T. W. Coke, Esq., loaded the guns a great part of the day on Saturday, and, as a finale to the day's sport, shot at and killed the last bird, which his nephew had previously missed. Lady Ann Coke was in the field a great part of the day; her ladyship carried refreshments for the sportsmen in her pony gig. Lord Kennedy chose for the scene of his exploits, Montreith, in Scotland, a manor belonging to Sir William Maxwell, considered equal to any lands in Scotland for rearing Partridges. On the first day of trial his lordship bagged fifty brace, and on the second eighty-two brace; being in all one hundred and thirty-two brace of Partridges in two days.

At the commencement of the Partridge-shooting season, which in some countries of Europe occurs earlier than with us, beginning in the canton of Geneva, for instance, on the 15th of August,—the young birds, when disturbed and separated, will, after resting in silence for a time, endeavour to get back to the field they were bred in, apparently in search of their former companions. Later in the season, the whole covey, when flushed, will take to the woods in some districts, and frequently when they have become strong on the wing, the remains of several covies unite, forming a pack, and are then very wild and difficult to approach.

Mr. Selby observes that the Partridge is found to vary considerably in size, according to situation, and the different nutritive qualities of food; thus, the largest are met with in districts where an abundance of grain prevails, whilst upon the precincts of moors, where but an inconsiderable portion of arable land is offered to them, they are much inferior in size, although perhaps by no means evincing a similar inferiority in point of flavour.

It has been observed to me also, that on some heathy districts in Surrey, as the Hurtwood and Bagshot Heath, the Partridges seldom frequent the corn-lands, but subsist on heath and hurtle-berries. These birds are not so white in the flesh when dressed as others, and have some of the flavour of the Grouse.

The Partridge is so generally distributed over this country as to make an enumeration of particular localities unnecessary; but though plentiful in some of the low grounds of Scotland, Mr. Macgillivray says there are none on the islands of the outer or western Hebrides. M. Nilsson includes this bird in his Fauna of Scandinavia, and it is found in suitable localities over the European continent to the shores of the Mediterranean. M. Temminck says it inhabits Barbary and Egypt; and two Russian naturalists have included it in their catalogues of the birds found in the country between the Black and the Caspian Seas, south of the Caucasian mountain range. Though stationary all the year in central Europe, this bird is said to be migratory in the countries that are at the limits of its geographical range; thus M. Malhèrbe in his Fauna of Sicily, says it visits that island every spring and autumn, when on its passage from North Africa to Italy and back.

The adult male has the beak bluish white; the irides hazel; behind the eye, and above the ear-coverts, a small triangular patch of naked red skin; the forehead, the space between the beak and the eye, with the feathers extending backwards as far as the ear-coverts, and downwards covering the front of the neck and throat, bright yellowish chestnut; top of the head and back of the neck greyish brown; the back and wing-coverts freckled with two shades of chestnut brown on a ground of wood-brown, the shaft of each feather forming a conspicuous streak of pale wood-brown; the wing-primaries, or flight-feathers, greyish brown, with transverse bars of wood-brown; the rump and upper tail-covers, some of which are long, freckled with two shades of brown, and barred transversely with chestnut; tail-feathers uniform reddish chestnut. The neck and upper part of the breast, the sides, and flanks, light bluish grey, minutely freckled with dark grey; lower breast with a rich chestnut-coloured horse-shoe-shaped patch on a ground of white; sides and flanks barred with chestnut; thighs greyish white; under tail-coverts yellowish brown; the legs and toes bluish white; the claws brown.

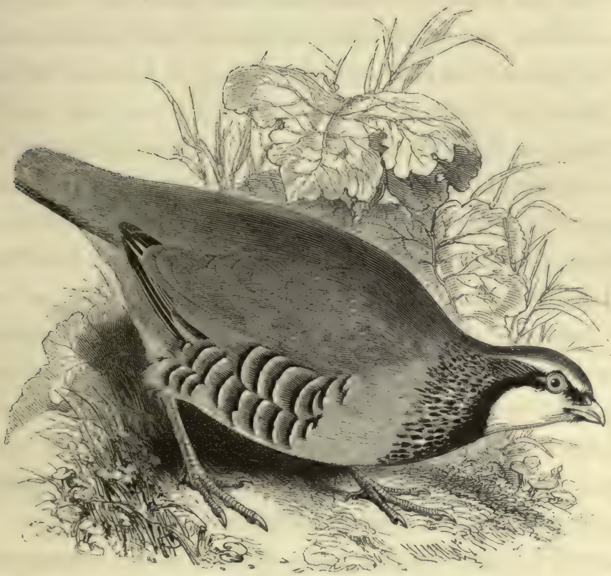
The whole length of the male bird twelve inches and a half. The wing in form rounded. The length from the carpal joint to the end six inches ; the first feather about as long as the sixth ; the second equal to the fifth ; and all of them shorter than the third and fourth, which are the longest in the wing.

The female is generally a little smaller than the male ; the light chestnut-coloured patch round the beak is lighter in colour, and smaller in size, than in the male, not extending farther back over the sides of the neck than a line falling perpendicularly from the eye ; the grey feathers of the lower part of the sides of the neck are more mixed with brown ; the lower breast is white, not assuming the dark chestnut patch till the second or third year ; the chestnut bars on the flanks are broader.

Young birds before their first autumn moult have no red mark behind the eye ; the general plumage is of a uniform brownish yellow, barred and streaked with darker brown ; the legs and toes yellowish clay brown. During the two first months of our shooting-season, the young Partridges may be found in every stage of moult.

Varieties of the Patridge in colour are very common, some exhibiting only patches of white ; others are wholly white ; and cream-coloured, or very pale buff-coloured varieties are also common.

RASORES. *TETRAONIDÆ.*



THE RED-LEGGED PARTRIDGE.

Perdix rufa.

	Red-legged Partridge,		Penn. Brit. Zool. vol. i. p. 365.
Perdix rufa,	*Guernsey*	,,	Montagu, Ornith. Dict.
Tetrao rufus,	*Red-legged*	,,	Bewick, Brit. Birds, vol. i. p. 355.
Perdix rufa,	*Guernsey*	,,	Flem. Brit. An. p. 45.
,, *rubra,*	*Red-legged*	,,	Jenyns, Brit. Vert. p. 172.
,, ,,	,,	,,	Gould, Birds of Europe, pt. xvii.
,, ,,	*Perdrix rouge,*		Temm. Man. d'Ornith. vol. ii. p. 485.

It is stated in Daniel's Rural Sports, that so long ago as the time of Charles the Second, several pairs of Red-legged Partridges were turned out about Windsor to obtain a stock; but they are supposed to have perished, although some of them, or their descendants, were seen for a few years afterwards; and I find other record of this bird having been killed in Berkshire. Mr. Daniel further states that the late Duke of Northumberland preserved many in hopes of their increasing upon his manors, and he also adds, that he himself, in 1777, found a covey of fourteen within two miles of Colchester. Some attempts were also made by the late Earl of Rochford. Dr. W. B. Clarke, of Ipswich, says, in Mr. Charlesworth's Magazine of Natural History for 1839, that numbers were introduced into England about the year 1770 by the Marquis of Hertford and Lord Rendlesham, each of whom had eggs procured on the Continent, carefully brought to England, and placed under domestic fowls; the former at Sudbourn, near Orford, in Suffolk, one of his shooting residences; the latter on his estates at Rendlesham, a few miles distant from Sudbourn; from these places the birds have been gradually extending themselves over the adjoining counties.

As will be seen by the names quoted at the commencement of this subject, the Red-legged Partridge is sometimes called the Guernsey Partridge, and it is found at Guernsey and Jersey. These Channel Islands, as they are frequently called, were probably at one time the most western locality of this species; but Mr. E. T. Bennett, and the Rev. L. Jenyns, have each referred to the Pulteney Catalogue, in which it is stated that this species has been shot at Upway, near Weymouth, in Dorsetshire; and this suggests the possibility of its sometimes reaching this country from Guernsey or Jersey. The Rev. Richard Lubbock, in some Ornithological notes sent me, mentions that these birds are becoming more and more common in Norfolk, and that it occasionally changes its ground, as he has known it abundant upon an estate in one year, and none to be seen there in the next, though the breeding was equally favourable in both seasons. That these birds sometimes take very long flights, is inferred from the circumstance that the Rev. T. Fowler, of Colton, near the coast between Yarmouth and Lowestoft, told Mr. Lubbock he knew two instances in which four or five Red-Legged Partridges were found upon the beach there, in so fatigued a state, that they were run down by the boatmen, after endeavouring to conceal themselves in piles of seaweed, and under the fishing-boats drawn up on the sand. The authors of the Catalogue of Norfolk and Suffolk Birds, published in the fifteenth volume of the Transactions of the Linnean Society, say, "These birds are now very plentiful in some parts of Suffolk. We have seen at least one hundred and fifty brace upon Dummingworth-heath, and they are found in greater or less numbers from Aldborough to Woodbridge." They are now making their appearance in Lincolnshire; have been taken in Cambridgeshire; and within the last few years I have known three examples killed very near Royston in Hertfordshire, one of which was shot out of a covey. The Rev. Richard Lubbock, in his recently published Fauna of Norfolk, mentions that in the beginning of January 1845 he was called into a bird-preserver's shop to look at a curious hybrid, believed to be bred between a Red-legged Partridge and a Pheasant. It came from Mr. Gurdon's of Letton, near Thetford. M. Temminck also refers to a hybrid between the Red-legged Partridge and the Common Partridge.

These birds scrape together a slight nest of dried grass and leaves upon the ground, among growing corn, grass, or clover; and two or three instances are recorded, in which nests with eggs were found in the thatch, or upon the top of low stacks. The eggs are from fifteen to eighteen in number, of a reddish yellow white, spotted and speckled with reddish brown; the length one inch seven lines and a half, by one inch and three lines in breadth. The young, like those of our Common Partridge, soon quit the nest after they are released from the egg-shell. They feed also, like other Partridges, on seeds, grain, and insects; they frequent turnip-fields, but appear to prefer heaths, commons, and other waste land, interspersed with bushes.

As an object of pursuit they are not much esteemed by sportsmen. These birds being stronger on the wing than the Common Partridge, are usually much more wild, and accordingly much more difficult to get shots at within distance. They foot away before a pointer like an old Cock Grouse; and unless the sportsman can drive them into furze, or some other such thick bottom, through which they cannot thread their way, but little chance of success attends him. When wounded, they will run to ground in a rabbit-burrow, or any other hole they can find.

Occasionally they perch in trees, and have been seen on the upper bar of a gate, or the top of a lift of paling. Mr. Daniel mentions that the covey of fourteen which he found near Colchester, were in a very thick piece of turnips, and for half an hour baffled the exertions of a brace of good pointers to make them take wing; and the first which did so immediately perched on the hedge, and was shot in that situation, without its being known what bird it was; a leash more were at length sprung from the turnips and shot; and two days after a brace more were killed by another person. Some years after, when out at Sudbourn with a gentleman who was particularly anxious to kill some of these Red-legged Partridges, and hunted with a brace of capital pointers for them only, the instant the dogs stood, the red birds ran, and always took wing, notwithstanding all the speed exerted to head them, at such distances as to be out of the range of shot; yet upon the same ground, and on the same day, after changing the mode of shooting, these birds lay to some springing spaniels till the dogs almost touched them before they rose, and two brace and a half were killed. The flesh of the Red-legged Partridge is white, but rather more dry, and not so much in request as that of the Common Partridge. The red bird has been known to breed in confinement.

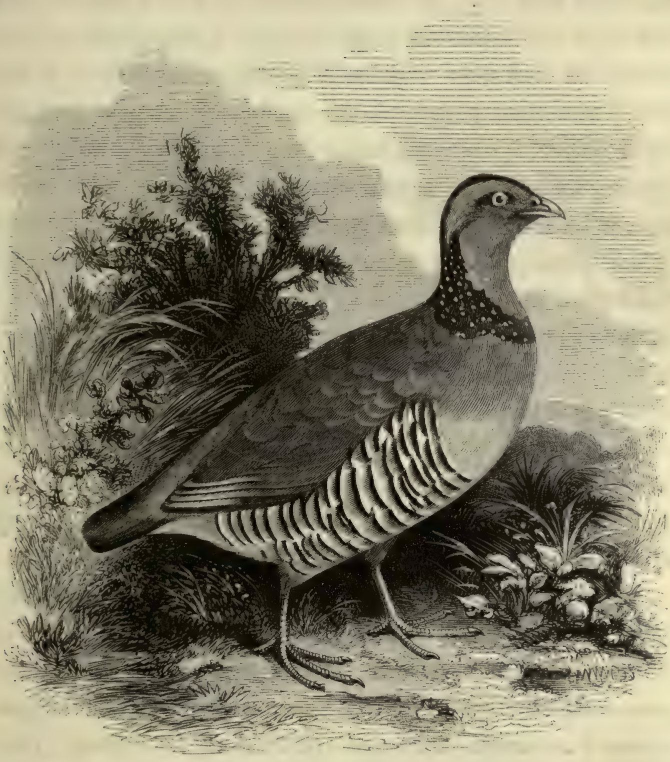
This bird is not an inhabitant of Germany or Holland, according to Continental authors, but it is found in France, Provence, Spain, Portugal, and Italy, and is probably confounded sometimes with two other species of Red-legged Partridges which are found in Barbary and Greece, and from thence to a considerable distance eastward.

M. Temminck mentions, in the fourth part of his Manual, that this species is also an inhabitant of Japan, and does not exhibit there any difference either in its form or the colouring of its plumage.

The adult male has the beak red; from the nostrils a black streak passes to the eye, and recommencing behind the eye passes downwards and then forwards, joining in front, forming a gorget of black, from which, both on the sides of the neck and in the front, numerous black streaks and spots descend towards the breast; the irides reddish orange, eyelids vermilion red; top of the head with a line of white before and behind the eye; back of the neck, the shoulders, back, wing-coverts, rump, and upper tail-coverts, hair-brown, the plumage smooth and blended; wing-feathers greyish black, with a margin of wood-brown on the outer web; tail-feathers chestnut; breast pearl-grey; belly, vent, and under tail-coverts, fawn-colour; feathers of the sides, flanks, and thighs transversely barred with pearl-grey, white, black, and fawn-colour; legs and toes red, the former with a blunt rounded knob in the situation of a spur; the claws brown.

Whole length thirteen inches and a half. From the carpal joint to the end of the wing six inches and one quarter; the first quill-feather as long as the sixth, but both shorter than the second, third, fourth, or fifth, which are nearly equal, and the longest in the wing.

The female is rather smaller than the male; but does not differ much, except that the plumage is not quite so bright in colour, and she has no rounded spur-like knob on the legs.



THE BARBARY PARTRIDGE.

Perdix petrosa.

The Red-legged Partridge from Barbary,	Edwards, Glean. pl. 70.
Barbary Partridge,	Lath. Syn. vol. ii. pt. ii. p. 770.
Perdix petrosa, ,, ,,	Gould, Birds of Europe, pt. i.
,, ,, *Perdrix gambra,*	Temm. Man. d'Ornith. vol. ii. p. 487.
,, ,, ,, ,,	,, ,, vol. iv. p. 333.

A bird of this species was picked up dead by a man that was hedging in a field at Edmondthorpe, about six miles from Melton Mowbray, in Leicestershire, in April 1842.

The plumage did not exhibit the slightest indication that the bird had been in confinement; it was a female, and the eggs inside were as large as sloes. I received this information from Mr. Robert Widdowson, of Melton Mowbray, who then possessed the specimen, and who sent me up a coloured drawing, taken from the bird, by which the species was immediately recognised. Two or three years ago, a bird of this same species was shot by a nobleman when sporting on the estate of the Marquis of Hertford, at Sudbourn, in Suffolk, where it was considered that a few of the eggs of the Barbary Partridge had been introduced with a much larger quantity of those of the more common red-legged birds, at the time the country about Sudbourn and Wickham Market was stocked by means of eggs obtained from the continent by the Marquis of Hertford and Lord Rendlesham, about 1770, as mentioned in the history of the species last described.

This specimen of the Barbary Partridge has now passed into the possession of Mr. Thomas Goatley, of Chipping Norton, Oxfordshire; who has most kindly lent me the preserved bird for my use in this work, and the figure here given was drawn from this British killed Barbary Partridge. As a species it is immediately distinguished from the more common Red-legged Partridge, which precedes it in this work, by the chestnut collar surrounding the neck, which is studded with small round white spots, and is much broader, and therefore more conspicuous in the male than in this example, which is a female.

The Barbary Partridge is found in Africa as far south as Senegal, extending its range northward over Morocco and Barbary, and from thence eastward to Algeria, where it is said by M. Malherbe to be very common. It is the Rock Partridge and Gambia Partridge of Buffon.

The Zoological Society have received skins of this Partridge sent by Messrs. Dickson and Ross from Fezzan. The note appended was as follows. "Killed in December 1842. Very common all over the country, frequenting ravines, hills, and all places where they can find cover, and often met with even in our gardens; flies in coveys; a shy bird; used as food by the natives, though its flesh is dry and without flavour. Its heart is so small that it does not exceed that of a sparrow."

Our countryman George Edwards, who gave a figure of this species in 1802 in his Gleanings in Natural History, says, "A pair of these birds were sent to me alive by my good friend Mr. Thomas Rawlings, merchant, residing at Santa Cruz, in that part of Barbary without the Straights of Gibraltar, on the Atlantic Ocean. I have not heard that the Red-legged Partridge, either European or African, were ever increased in England, though both sorts are frequently brought hither."

Of the islands of the Mediterranean the Barbary Partridge is found in Majorca, Minorca, Corsica, Sardinia, and Sicily; and north of the Mediterranean is said to be abundant in Spain, inhabits Provence and France, has been found in Germany, Italy, and Greece, and eastward as far as the country of Mount Caucasus.

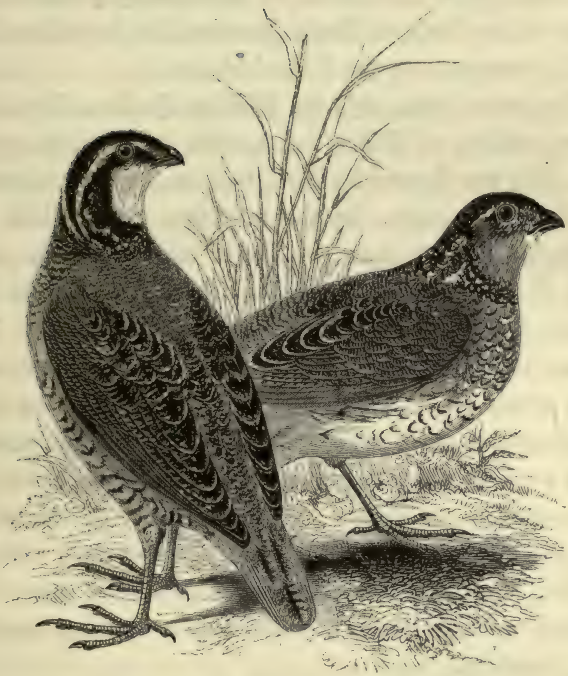
In its habits the Barbary Partridge, it is said, very closely resembles the Red-legged Partridge last described. "The female chooses barren places and desert mountains, where, among low bushes she deposits her eggs to the number of fifteen, of a yellowish colour, thickly dotted with greenish olive spots. Seeds, grain, and insects, are selected as food."

The beak and a bare space around the eyes red; irides hazel; sides of the head above and below the eye bluish ash ; ear-coverts light brown ; top of the head and back of the neck rich chestnut brown, which ends in a broad collar of the same colour descending to the bottom of the neck in front, and prettily varied with small round white spots ; back and tail greyish brown ; wing-coverts tinged with blue, and edged with rufous ; wing-primaries brownish black on the inner web, the outer web of the first greyish-brown, of the others light wood brown ; throat and neck in front, above and below the collar, bluish ash ; breast buff ; feathers of the sides and flanks barred with white, black, and bright chestnut ; belly, vent, and under tail-coverts, reddish buff ; legs, toes, and nails, red.

The length of the male thirteen inches ; wing from the anterior bend six inches ; the legs armed with blunt spur-like protuberances.

The female is rather smaller than the male ; the general plumage less brilliant in colours, and the legs without any spur-like protuberances.

RASORES. *TETRAONIDÆ.*



THE VIRGINIAN COLIN.

Ortyx Virginiana.

	American Quail,	MONTAGU, Suppl. to Ornith. Dict.— *See* Grosbeak, White-winged.
Coturnix Marylanda,	„ „	FLEM. Brit. An. p. 46.
Perdix Virginiana,	*Virginian Partridge,*	JENYNS, Brit. Vert. p. 173.
Ortyx „	„ *Colin,*	MACGILL. Brit. Birds, vol. i. p. 228.
Perdix Borealis,	*Colin Colenicui,*	TEMM. Man. d'Ornith. vol. iv. p. 335.

ORTYX.—*Generic Characters.*—Bill short, thick, and strong, higher than broad, slightly convex, the tip rounded. Nostrils basal, linear, operculate, nearly concealed. Feet of moderate length; tarsus shorter than the middle toe. Wings short, concave, rounded; the first feather short, the fifth the longest in the wing. Tail of twelve feathers, rather short, and rounded.

This bird, the *Perdix Virginiana* of Wilson and Mr. Audubon, the *Ortyx Virginianus* of Bonaparte, called also an *Ortyx* by Mr. Audubon in his recently published Synopsis of the Birds of North America, has been introduced to this country from the United States.

The genus *Ortyx*, says Sir William Jardine, Bart. in his octavo edition of Wilson's American Ornithology, vol. ii. page 223, was formed by Mr. Stephens, in his continuation of Shaw's Zoology, for the reception of the thick and strong-billed Partridges peculiar to both continents of the New World, and holding the place there, with the Partridges, Francolins, and Quails of other countries. They live on the borders of woods, among brushwood, or on the thick grassy plains, and, since the cultivation of the country, frequent cultivated fields. During the night some of them roost on trees, and occasionally perch during the day; when alarmed, or chased by dogs, they fly to the middle branches; and Mr. Audubon remarks, they walk with ease on the branches. In all these habits they show their alliance to the perching *Gallinæ*, and a variation from the true Partridge.

The first notice I am acquainted with of the occurrence of this American bird in England, is furnished by Colonel Montagu in the Supplement to his Ornithological Dictionary, under the article Grosbeak, white-winged, where it is stated that a male was shot near Mansfield by Mr. Harrison; the specimen was sent to Lord Stanley, now Earl of Derby. Montagu afterwards adds, the American Quail has been turned out in some parts of the British Empire, with a view to establish the breed; but we believe without effect. The late General Gabbit liberated many on his estates in Ireland; but in two years the breed was lost. Sir William Jardine observes in the Naturalist's Library, that "the Virginian Partridge has been attempted to be introduced in several parts of the European Continent, but we are uncertain with what success. They have also been tried in some of the English counties." Two or three authors have recorded that a quantity of the Virginian Partridge were turned down by Edward John Littleton, Esq. on his estates at Teddesley, in Staffordshire; and one gentleman states that the guard of a coach informed him that he had the care of a basket of these birds by his coach; that they all by some accident got out and flew away; and that in the part of the country where they made their escape (the name of the place was forgotten,) they had bred and increased exceedingly. In the collection of Mr. Henson, at Cambridge, was a specimen of this bird which was killed at Holkham; and in a letter quoted by Mr. H. Denny in the 13th volume of the Annals of Natural History, written to him in November 1825, by the Rev. John Burrell, F.L.S., Rector of Letheringsett, near Holt in Norfolk, a zealous naturalist, it is stated in reference to this Virginian Ortyx, of which he had obtained a specimen in the season of 1824, and another in 1825, in that county, "it is now quite a colonised creature, and numerous are the coveys which, report says, the poachers cannot destroy, its manners are so watchful, and the bird so shy of man." In further reference to the existence of this species in Norfolk, the Rev. Richard Lubbock wrote me as follows:—"A nest was found at Barton in this county, three or four years back, containing numerous white eggs, which were sold to a bird preserver in Norwich. Two are in my possession. I endeavoured to ascertain the whole number of the eggs, but could not: there must have been above a dozen. The nest was found in a marsh. Mr. Coke, I have understood, turned off many of these birds at Holkham, with what ultimate success I know not. This made me suppose that the eggs in question might belong to this bird, particularly as a fenman near the place where this nest is said to have been found, mentioned to me his having seen a bird like a Partridge in flight, but much smaller. Mr. Salmon, of Thetford, had some of these eggs; and I think he told me he showed them to Mr. Hewitson."

On comparing the outline of one of these eggs with three specimens of the eggs of *Ortyx Virginiana* in my own collection, received from America, the accordance was so exact as to leave no doubt that they belonged to the same species; and lastly, I may add that a few years back Mr. Leadbeater received three or four freshly killed specimens, with directions to mount them together in one case. These birds had been shot in Kent, were in beautiful plumage, and when preserved formed a very interesting group.

Since the publication of the first edition of this work, a specimen of this Virginian Quail has been shot in Northumberland, and is now in the collection of Mr. J. Hancock, of Newcastle-upon-Tyne; and another was shot off a tree near Bristol, as mentioned by Mr. Hewitson in the second edition of his work on the eggs of our British Birds. In September 1844, a couple were shot near Egham as they rose from a pea-stubble. On the 29th of October, in the same year, a pair were killed out of a small covey of seven or eight, in a copse near Egham, by Wyatt Edgell, Esq. This latter occurrence was communicated to me by G. R. Marten, Esq., who very kindly allowed me an examination of the birds; and in April of the present year, 1845, a very fine old male was obtained between Weybridge and Chertsey by a boy, who, hearing the call-note of a bird, whistled a similar note in answer; the bird was deceived by the imitation, and came so close up to him that he killed it with a stone.

A correspondent, residing in Staffordshire, thus describes in the Magazine of Natural History the habits of the *Ortyx Virginiana* in confinement:—" A few years ago I purchased two brace of these elegant little birds from Mr. Cross, of Exeter Change, London, and brought them home with me in the coach. I have a small garden, walled round, and covered over with wire, into which I turned them, but each separated from the other by a wire partition. Towards the latter end of May, I perceived one of the cock birds carrying straws, and twisting them about over his head; and I found they were making a nest within a bundle of pea-sticks, which were placed in the garden for them to run under and hide themselves. This nest was the joint production of male and female; it was placed on the ground within the pea-sticks, and shaped much like a Wren's, with a hole on one side, and covered over at top. After the hen had laid about twelve eggs she began to sit, and with as much assiduity as our common hen. When I thought it was her time to hatch, I examined her nest, and found it deserted, and the egg-shells, which had evidently contained young birds, lying about. Much pleased with this circumstance, I went cautiously about to find the dam with her little ones; and, after searching a considerable time, the first intimation I had of her presence was from her flying in my face with great agitation, like our common hen. I retired much gratified, and observed the young ones, nine in number, collect again under the wings of their mother. The assiduity of this excellent parent was truly exemplary, and her attention unremitting, and she reared them every one with very little trouble. What is very singular, there were eight cocks and but one hen, all of whom were reared till they moulted, and got their adult plumage; when, from some cause which I could never ascertain, they began to droop one after another; and before Christmas all the young birds died. Though I examined the stomachs and gizzards of most of them, yet I never could find out the cause of their deaths; but I have little doubt of its being some deleterious substance picked up in the place where I separated them from the old ones, soon after they became fully fledged, as the old birds escaped this mortality.

"The other pair never bred; but it was easily accounted for, as the hen was unwell from the time I turned them down, and she lingered on to October, and then died.

"Previously to and during the time the hen was sitting, the cock serenaded her with his harsh and singular notes, some of them very similar to the mewing of a cat. He had also a peculiarity of constantly running round in a circle, till the ground whereon he performed his evolutions was worn as bare as a road, and the turf trodden down much in the same way as it is by the Ruff in the fens during the season of incubation.

"Nothing could be more cordial and harmonious than this happy family. When the shades of evening approached, they crowded together in a circle on the ground, and prepared for the slumbers of the night by placing their tails all together; with their pretty mottled chins facing to the front in a watchful round-robin.

"When food was thrown in for them, which consisted chiefly of spirted barley and wheat, and occasionally bread, the male bird would peck at the grain, but not eat any himself until he had called his family around him first to partake of the food, which he did with many soft blandishments, and with much strutting and spreading of the wings and tail.

"I was greatly disappointed at the loss of this interesting family; and I waited with some impatience for the result of another season. The season at length arrived: they built their nest again as before; the hen laid about sixteen eggs; when, to my great mortification, just as she had begun to sit, I found her dead one morning; and can no otherwise account for the circumstance than by supposing that something must have frightened her in the night, and caused her to fly up with violence against the wires, which proved fatal to her. Thus ended my hopes of domesticating this elegant little bird, as I have not been able to procure another female. I wished much to breed some more, and turn them out if successful, as they lay many eggs, and are much more easily reared than either Pheasants or Partridges."

This bird is a general inhabitant of North America, from the northern parts of Canada and Nova Scotia, in which latter place it is said to be migratory, to the extremity of the peninsula of Florida. In the eastern and middle districts, Mr. Audubon says, its common name is that of Quail, but in the western and southern States, it is called a Partridge. Their food, in a wild state, consists of grain, seeds, insects, and berries; but buckwheat and Indian corn are also particular favourites. The eggs are white; one inch two lines and a half in length, by one inch in breadth, at the larger end, from whence they taper rapidly to a point. The nest in its form, and the habit of the covey of clustering in a circle, in a wild state, are as already described. Various devices are employed for taking them; and they are to be seen in the markets of the United

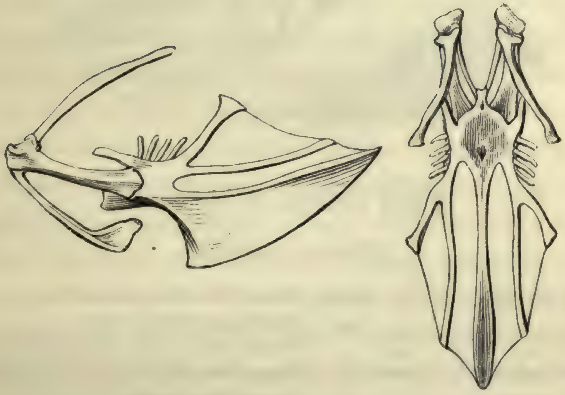
States in considerable quantities, both alive and dead. Their flesh is white, tender, and delicate, and is accordingly very much in request.

The adult male has the beak almost black; the irides hazel; upper part of the head dark chestnut brown; these feathers occasionally elevated, forming a crest; from the forehead to the eye, and from thence over and behind the ear-coverts, a band of pure white, below this a band of dark chestnut brown and black, which reaches the sides of the neck, where the brown feathers are white in the middle; the upper part of the back and the wing-coverts reddish brown; lower part of the back, rump, and upper tail-coverts, a mottled greyish brown, with a few spots of dark brown; wing-primaries greyish brown; the scapulars and tertials very dark brown, with buff-coloured margins; tail-feathers bluish grey; chin and throat white, with a gorget of black below; breast and belly buffy white, with transverse bars of black; sides, flanks, and under tail-coverts, varied with reddish brown and buffy white; legs and claws reddish brown.

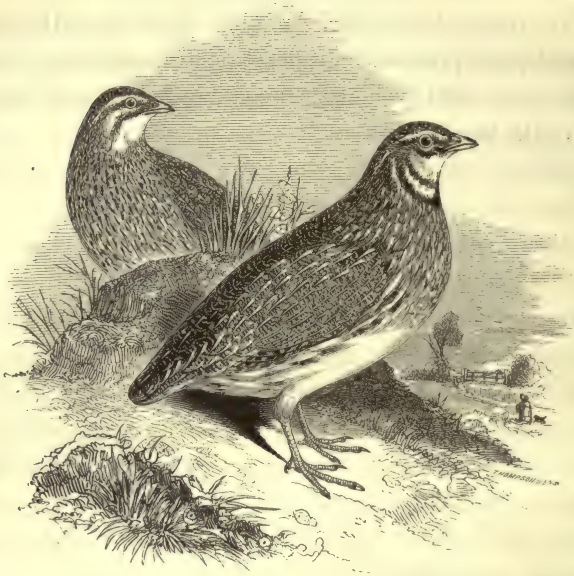
Whole length rather more than nine inches. From the carpal joint to the end of the wing, four inches and a half: the wing in form rounded; the first and the eighth feathers of the same length; the second equal to the sixth; but not so long as the third, fourth, or fifth, which are nearly equal in length to each other, but the fourth rather the longest in the wing.

The female is rather smaller than the male; the band before and behind the eye is less conspicuous, the light-coloured edges of the scapulars and tertials are more white than buff-coloured; the chin and throat are pale buff colour; the breast is nearly white, with much less of the reddish brown colour on the upper part, the sides, or the flanks.

Very young birds, Mr. Audubon says, have the beak brownish yellow; irides light hazel; the general colour of the upper parts light yellowish brown, patched with grey; sides of the head dusky.



RASORES. *TETRAONIDÆ.*



THE COMMON QUAIL.

Coturnix vulgaris.

Perdix coturnix,	*The Quail,*	Penn. Brit. Zool. vol. i. p. 366.
Tetrao ,,	,, ,,	Montagu, Ornith. Dict.
,, ,,	,, ,,	Bewick, Brit. Birds, vol. i. p. 361.
Coturnix vulgaris,	*Common* ,,	Flem. Brit. An. p. 45.
Perdix coturnix,	,, ,,	Selby, Brit. Ornith. vol. i. p. 437.
,, ,,	,, ,,	Jenyns, Brit. Vert. p 174.
Coturnix dactylisonans,	,, ,,	Gould, Birds of Europe, pt. xiii.
Perdix coturnix,	*La caille,*	Temm. Man. d'Ornith. vol. ii. p. 491.

Coturnix. *Generic Characters.*—Beak strong, shorter than the head, upper mandible curved. Nostrils basal, lateral, half closed by an arched membrane. Feet with four toes, those anterior connected by a membrane as far as the first articulation. Tail short, rounded, recumbent, almost hid by the tail coverts.

Our British Quail belongs to that section of the genus *Coturnix* designated by Colonel Sykes* as having the upper mandible but slightly bent, the wings pointed, and the legs smooth, or without tubercles; species belonging to other divisions of the genus have wings rounded in form, with occasionally spur-like tubercles upon the legs.

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* Transactions of the Zoological Society, vol. ii. page 1.

This bird has generally been considered as a summer visiter only to Great Britain; but so many instances have latterly been recorded of its occurrence, in Ireland particularly, as well as in England, during the winter months, as to make it appear that a portion of them do not return southward in autumn. The Quails arrive from Africa in countless thousands on the numerous islands of the Mediterranean, and the Grecian Archipelago about April, and hence, according to Pennant, the warm southerly winds of that month bringing birds to Greece, are called in that country *ornithix.* So numerous are they in other countries in the line of their migration, that one hundred thousand are recorded to have been taken in one day on the west side of the kingdom of Naples. From thence they spread over southern Europe, migrating every year as far north as Scandinavia and Russia. They arrive in this country in May, and seem more partial to open champaign countries than to those which are enclosed. The males are said to arrive before the females, and advantage is taken of this circumstance by bird-catchers in France, who every year decoy hundreds of dozens of males only into their nets by imitating the call-note of the female. These birds are brought by French dealers in Quails to the London markets in large quantities, and sold to the poulterers for the use of the table; and on examination of dozens together in the flat cages in which they are carried, it is rare to find a female among them. The birds while in confinement, are fed on hemp-seed, and soon become very fat. This particular food is probably also the cause of the darker tone of colour which pervades these birds as compared with those that are killed in a wild and more natural state. The flesh is delicate, and very little inferior to that of the Landrail; it is accordingly very much in request, and in London in particular, during the season, — that is, from May to August, — the consumption is large. I have found, on inquiry, that three thousand dozens have been purchased of the dealers by the London Poulterers in one season.

Though very like a Partridge, except in size, and resembling those birds also in several of their habits, Quails do not pair. The males are polygamous, and have a shrill whistling note, which is generally repeated three times in quick succession, and they are said to lose their voice when the breeding-season is over, as they are not heard to exercise their notes afterwards. The female scrapes out a small cavity on the ground, into which she collects a few bits of dry grass, straw, or clover stalks; she lays from seven to twelve eggs; nesting among wheat generally, but sometimes in a piece of clover or grass. The eggs are of a yellowish or dull orange-coloured white, blotched or speckled with umber brown; one inch one line in length by eleven lines in breadth. Upon these she sits about three weeks; the young are able to follow her soon after they are excluded from the shell, and learn to feed on seeds, grain, insects, and green leaves. Many are found and killed in wheat stubbles by Partridge shooters in the month of September; they fly quick, but generally straight and low, and are difficult to raise a second time when they have been once flushed and alarmed. The greater portion leave this country in October.

An interesting account of our Quail is included by Colonel Sykes in the paper which has been already referred to on "The Quails and *Hemipodii* of India," as published in the second volume of the Transactions of the Zoological Society of London, of which the following extract forms a part.

"I have carefully examined and compared specimens from China,[*] India, the Cape of Good Hope, and England, and must pronounce them, in spite of the extraordinary geographical range, to be one species, the differences between the specimens not being greater than are found amongst individuals from the same locality. The Indian bird has the same cry of *pickerwick*, or *peek-wheet-wheet*, which, M. Temminck says, induced M. Meyer to give it the specific appellation of *dactylisonans*.[†]

A matter of considerable historical interest is associated with this bird, as there is the strongest ground for believing that it is the identical species, *Tetrao Israelitarum*, of whose instinct it pleased the Divinity to avail himself in supplying the famishing Israelites with food in the Wilderness. Authors have differed with respect to the real nature of this food; Rudbeck[‡] asserting that it was a *flying fish*, and Ludolph[§] that it was a *locust:* but the 26th, 27th, 28th, and 29th verses of the 78th Psalm, determine it to have been a *bird:*—"He caused an east wind to blow in the heaven: and by his power he brought in the south wind. He rained flesh also upon them as dust, and feathered fowls (fowl of wing) like as the sand of the sea: and he let it fall in the midst of their camp, round about their habitations. So they did eat, and were well-filled: for he gave them their own desire."[||]

Bochart[¶] and Dr. Harris[**] state that the Hebrew word used is *Selav*, in Arabic *Selwee*, or *Selvai* (a Quail,) which is constantly rendered by the Septuagint ὀρτυγομήτρα, a large kind of Quail. Aristotle, indeed, calls the Rail (*Rallus* and *Crex*) *ortygometra;* but on the whole it is to be inferred from Bochart that the Greeks used the word rather to indicate the size of the ὄρτυξ, than as descriptive of a different *bird;* and Josephus considers ὀρτυγομήτρα and ὄρτυξ synonymous, and states that *Quails* abound on the gulf of the Red Sea;* and we know that they abound in Egypt, Barbary, Asia Minor, and at certain seasons in Europe at the present day.

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[*] M. Temminck says our Quail is also found in Japan.

[†] Pig. et Gal. tom. iii. p. 501.

[‡] Ichthyol. Bibl.

[§] Comment. ad Hist. Æthiop. p. 108.

[||] See also Exodus xvi. 13, and Numbers xi. 31 and 32.

[¶] De Animalibus S. Scripturæ.

[**] Natural History of the Bible, p. 317.

There is another mode to connect the bird of Scripture with the *Coturnix dactylisonans*, and this is readily done by the simple fact of its being the only species of Quail that migrates in multitudes; indeed we have not any satisfactory account that any other species of *Quail* is migratory. Aristotle mentions the habit; and Pliny states they sometimes alight on vessels in the Mediterranean and sink them! Belon found Quails alight in autumn on a vessel bound from Rhodes to Alexandria; they were passing from the north to the south, and had wheat in their craws. In the preceding spring, sailing from Zante to the Morea, he saw flights of Quails going from the south northwards, Buffon relates that M. le Commandant Godelun saw Quails constantly passing Malta during certain winds in May, and repassing in September; and that they flew by night. Tournefort says that almost all the isles of the Archipelago are covered with them in certain times of the year. In the commencement of autumn, such great quantities are captured in the isle of Capri,† near Naples, as in former times to afford the bishop the chief part of his revenue; and he was called in consequence the Bishop of Quails. M. Temminck says that in spring such prodigious numbers of Quails alight on the western shores of the kingdom of Naples, about Nettuno, that one hundred thousand are taken in a day. They also arrive in spring in similar numbers on the shores of Provence, so fatigued, that for the first days they allow themselves to be taken by the hand. Sonnini states that they arrive in Egypt in September.

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* Lib. iii. cap. 1.

† On this small island alone, called Goat Island, at the entrance of the Bay of Naples, 160,000 Quails are recorded to have been netted in one season.

With these facts before us, considering the positive testimony of the Psalmist that the unexpected supply of food to the Israelites was a *bird*, and that *bird*, agreeably to the Septuagint and Josephus, a *Quail*, that only one species of Quail migrates in prodigious numbers, and that species the subject of the present notice, we are authorized to pronounce the *Coturnix dactylisonans* to be the identical species with which the Israelites were fed. We have here proof of the perpetuation of an instinct through 3300 years,*—not pervading a whole species, but that part of a species existing within certain geographical limits; an instinct characterised by a peculiarity which modern observers have also noticed, of making their migratory flight by night; "And it came to pass, that at even,† the Quails came up and covered the camp."‡ As might be expected, we see the most ancient of all historical works and natural history reflecting attesting lights on each other.

It is probable that these small defenceless birds fly only by night to avoid the attacks of birds of prey; in crossing seas, they must of course continue their flight by night as well as by day. I am aware, however, from personal observation, that the *Grus Orientalis*, whose size secures it from the attacks of other birds, also migrates during the night. M. Temminck thinks it probable that Quails emigrate for food rather than to enjoy a uniform climate; and in this opinion I coincide, as the great changes of temperature in India do not influence the movements of this species, food being abundant at all seasons.

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* 1491 years before Christ.

† Query "night?"

‡ Exodus xvi. 13.

I am not aware that this bird is used for combats (although a species with tubercles is) in India; and it is not likely the people would warm their hands with it, as is said to be the case in China.

From some experience I consider Quails very heating food; and it is probable the French proverb, "hot as a Quail," may apply rather to its stimulating properties than to its animal heat.

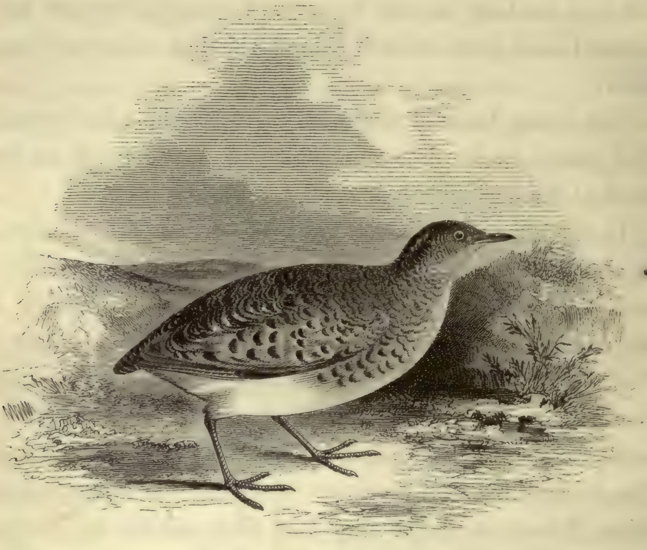
The adult male has the beak brownish grey; the irides hazel; top of the head dark brown, with a pale wood brown streak from the base of the beak on each side over the eye and the ear-coverts, and a narrow streak of the same colour over the crown of the head to the nape of the neck; the plumage of the back, wings, rump, and tail brown, with lighter-coloured shafts and longitudinal streaks of wood-brown; wing-primaries dusky brown, mottled with light brown; chin and throat white, bounded by two half-circular dark brown bands descending from the ear-coverts, and with a black patch at the bottom in front; breast pale chestnut brown with the shafts of the feathers straw colour; lower part of the breast, the belly, vent, and under tail-coverts, yellowish white; the flanks streaked with pale chestnut; legs, toes, and claws pale brown.

The whole length seven inches. The wing from the carpal joint to the end four inches and a half: the first feather a very little longer than the third, but a little shorter than the second, which is the longest in the wing; the form of the wing is therefore pointed.

The female has no dark half circular marks descending down the sides of the neck, nor the black patch in front; but the feathers on her breast are strongly marked with a small dark spot on each side of the light straw-coloured shaft.

The young birds of the year resemble the adult female. The young males do not acquire the black patch on the front of the neck till their second year.

In the illustration which precedes this subject, the figure in the foreground represents the male bird; that behind and a little to the left, the female; and in reference to the unusual occurrence of Quails in the southern parts of England during winter, noticed at page 401, I may mention that early in February 1844, I saw six Quails at a poulterer's shop in London, which had been sent up from Cambridgeshire, and as these birds had no wound about them, I had no doubt they had been caught by fowlers when drawing nets for Larks. Of these six, three were females. A writer in the Zoologist, page 871, refers to the late appearance of Quails in Oxfordshire in the following terms. "In consequence of some fields of corn remaining in this part of England, still standing in December, 1844, Quails did not leave us till very late. After several days of severe frost, I heard of a pair having been seen in a field, in the parish of Hornsey, near this town. I cannot remember the exact date, but it was some time in December; and in the last week in November, I saw a pair in this market, where they have been more plentiful than usual this autumn, which had been killed down in the fens. The birds seen at Hornsey, had not been driven away by intense frost, which, curious to say, prevailed while the barley where they lay was being carried."—H. T. Frere, C. C. C. Oxford.



THE ANDALUSIAN HEMIPODE.

Hemipodius tachydromus.

	Gibraltar Quail,	Lath. Syn. vol. iv. p. 790, sp. 37.
	Andalusian „	„ „ „ p. 791, sp. 38. fig. frontispiece to the vol.
Hemipodius tachydromus,	*Andalusian Turnix,*	Gould, Birds of Europe, pt. xiv.
„ „	*Turnix tachydrome,*	Temm. Man. d'Ornith. vol. ii. p. 494.
„ *lunatus*	„ *à croissans,*	„ „ vol. ii. p. 495.
„ *tachydromus,*	„ *tachydrome,*	„ „ vol. iv. p. 340.

Hemipodius. *Generic Characters.*—Beak moderate, slender, very compressed; culmen elevated and curved towards the point. Nostrils lateral, linear, longitudinally cleft, partly closed by a membrane. Tarsus rather long. Toes three before, entirely divided; no posterior toe. Tail composed of weak yielding feathers clustered together, and concealed by the feathers of the back. Wings moderate, the first quill-feather the longest.—*Gould.*

The term *Hemipodius*, signifying Half-foot, was applied generically by M. Temminck in 1815 to several species of quail-like birds, but with three toes only, which from their very diminutive size were considered the pigmies among the gallinaceous birds. They live on sterile sandy plains or on the confines of great deserts: they run with great speed, seldom taking wing; ready to hide themselves at the slightest appearance of danger, and are found with difficulty among the herbage under which they conceal themselves. But one species is known in Europe, and of that one, parts of its history are still involved in some obscurity. It is found in the southern countries of Europe from Spain to Italy, and it is also found in North Africa, from Barbary to Tripoli. Dr. Latham, in a note, quoting Pennant, says, most likely this is the same bird with the Three-toed Quail of Shaw, which he says is a bird of passage, and is caught by running it down; for having been sprung once or twice, it becomes so fatigued as to be overtaken and knocked down with a stick.—*Travels in Barbary*, p. 300. M. Temminck considers that it does not migrate because it is found in Sicily in November and December, yet its pointed wings indicate considerable powers of flight. It is found in Europe, more particularly in various parts of Spain, from Gibraltar to Arragon: its food consists of seeds, grain, and insects; it is considered to be polygamous, but its habits in reference to nidification are imperfectly known.

The first occurrence of a pair of the Andalusian Hemipode in this country is thus recorded in the 14th volume of the Annals of Natural History, in a letter to the editors:—

"Gentlemen,—I have recently received a bird which appears to me to be new to this country; it is a Quail, having no back toe, and is not mentioned, I believe, in any work on British Ornithology to which I have had access; but in Dr. Latham's General History it is described as the *Perdix Gibraltarica*, with which my specimen appears to agree. The bird was shot by the gamekeeper on the Cornwell estate in this county, about three miles from hence, and has been kindly presented to me. It was found in a field of barley, of which kind of grain, by the by, hundreds of acres are still standing, with no prospect of being harvested in a proper state. Before I proceeded to preserve the bird, I took the measure of its various parts, the colour of its eyes, bill, and feet, its weight, &c., after which I found its description in the work before alluded to. It was shot on the 29th of October last, since which time another has been killed near the same spot by the same person, but its head was shot off, and otherwise so mutilated as to be unfit for preservation: this might probably complete the pair, mine being a male bird. It had in its gizzard two or three husks of barley, several small seeds similar to charlock, some particles of gravel, and was very fat. It was considerably injured by the shot, but I have set it up in the best manner I could, and consider it a valuable addition to my small collection of British Birds. Should this prove to be the only known instance of the capture of the bird in Britain, I shall feel glad in having saved it from oblivion. I am, Gentlemen, your obedient servant.

"Chipping Norton, Oxon, Nov. 11, 1844." THOS. GOATLEY.

"The bird in question is the *Hemipodius tachidromus* of Temminck, which is figured in Mr. Gould's Birds of Europe, vol. iv. plate 264. Mr. Gould, to whom we have shown Mr. Goatley's letter, considers this one of the most interesting additions to the British Fauna that has occurred for many years."—Ed.

This species differs from the true Quails in having no hind toe; in the greater length and more slender form of its bill, and in the very probable circumstance of its laying only four eggs: in all of which points it exhibits an affinity to the Bustards, the Coursers and the Plovers. I have adopted Mr. Gould's term Hemipode for this bird as at once expressive of an obvious peculiarity.

Mr. Gould possesses four very interesting letters written by Linnæus from Upsal to the Rev. John White, then at Gibraltar, one of the brothers of Gilbert White of Selborne. I have at page 235, under the article on the Swallow, referred to a Natural History of Gibraltar in M.S. by John White, which unfortunately remains still unpublished. In the first of these letters, dated Upsal, 20th January, 1772, Linnæus congratulates John White on his being an admirer of the works of the GREAT CREATOR of ALL. In the second, dated the 7th of August, 1772, in reference to John White's Natural History of Gibraltar, Linnæus writes, *Fauna tua Calpensis esset mihi et omnibus exoptissima.*

Mr. Gould very kindly allows me to make further extracts in reference to three very rare British Birds. John White appears to have been in the habit of sending Linnæus specimens, some of which were new to him. Of our White-bellied Swift, page 266 of this volume, Linnæus writes *Hirundo melba, quam antea non vidi, affinis H. apus.* Of the little Three-toed Quail, the subject of the present article, Linnæus writes, *Coturnix tridactilus, an ex ordine Gallinarum aut Grallarum.* His notice of our Pratincole will be given with the account of that bird.

Of the genus *Hemipodius*, South Africa produces two species; Madagascar one; India two; Sumatra and the Philippine Islands two; but Mr. Gould has shown me seven or eight species brought from Australia, three of which are already figured in his beautiful work now in progress on the Birds of that country, and the others are forthcoming. So much new light has Mr. Gould thrown on the Natural History of this interesting group, that I venture, with permission, to abstract a portion of the details supplied with the species figured in the second part, called the Fast-flying Hemipode.

" I found this new and interesting species of *Hemipodius* abundant in various parts of New South Wales, but whether it has always visited those localities, or has recently made its appearance there, I cannot say. Mr. Stephen Coxen, on whose estate it was plentiful, and who, it was well known, has for some years paid considerable attention to the Ornithology of Australia, could give me no information respecting it; and it would appear to have escaped the notice of collectors generally, for I have never seen a specimen in any collection either public or private. I clearly ascertained that it is strictly migratory, by finding it abundant in those places in summer which I had previously visited in winter, when no appearance of one was to be seen."

" The season of more than usual luxuriance that followed the long and distressing drought of 1838-39, bringing in its train a number of rare and interesting species, was highly advantageous to the objects of my expedition. It was to this season of plenty, when the whole face of the country was covered with the richest vegetation, that I am inclined to attribute the appearance of vast numbers of this species over the district of the whole Upper Hunter, particularly in the flats of Segenho, Invermein, and Yarrundi. It appeared to give preference to the low stony ridges which border and intersect these flats, and which are thinly covered with grasses of various kinds, for it was in such situations I generally found it, though on some occasions I started it from among the rank herbage clothing the alluvial soil of the bottoms. It lies so close as to be nearly trodden upon before it will rise, and when flushed it flies off with such extreme rapidity, as, combined with its small size, and the intervention of trees, to render it a most difficult shot to the sportsman. On rising it flies to the distance of one or two hundred yards, within two or three feet of the surface, and then suddenly pitches to the ground. As might be expected, it lies well to a pointer, and it was by this means that I found many which I could not otherwise have started."

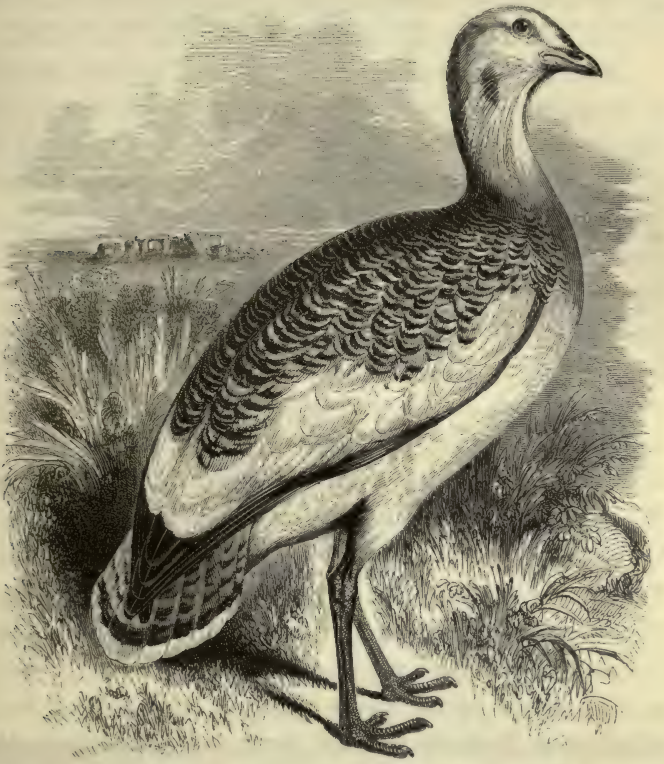
"One of the most singular circumstances connected with this species (and the other two) is the great difference in the size of the sexes, the males being but little more than half the size of their mates. Pleased as I was at making acquaintance with this little bird, I was still more gratified at finding its nest and eggs. Natty and Jemmy, two intelligent and faithful natives, of the Yarrundi tribe, and who always accompanied me, also caught several of the young which had not left the nest many days." This species was found to have a wide range in New Holland; the eggs four in number, the nest on the ground, under shelter of a small tuft of grass.

To return to our British killed bird: I have again to record my thanks to Mr. Goatley for most kindly allowing his interesting specimen to be drawn from and engraved for this work.

The point of the beak is light brown, the base pale wood brown; irides hazel; top of the head dark brown with a lighter brown streak in the middle, passing backwards; the cheeks brown, speckled with buff; upper surface of the body dark brown, with numerous narrow transverse bars of chestnut, black and buffy white; tail greyish brown; wing-coverts yellowish brown, varied by a dark spot placed on the centre of a larger spot of pale yellow brown; primaries greyish brown, with a light-coloured line along the edge of the outer web; chin whitish; throat, neck in front, and upper part of the breast pale chestnut; sides and flanks yellowish white, with a crescent-shaped mark of rich brown occupying the centre of each feather; lower part of the belly, vent and under tail-coverts buffy white; legs and toes pale brown.

Whole length of the bird about six inches; from the anterior bend of the wing to the end of the first primary, which is the longest, three inches and a half.

In reference to Linnæus, the vignette below represents the entrance into Upsal.



THE GREAT BUSTARD.

Otis tarda,

Otis	*tarda,*	*The Great Bustard,*	Penn. Brit. Zool. vol. i. p. 376.
,,	,,	,, ,,	Montagu, Ornith. Dict.
,,	,,	,, ,,	Bewick, Brit. Birds, vol. i. p. 364.
,,	,,	,, ,,	Flem. Brit. An. p. 115.
,,	,,	,, ,,	Selby, Brit. Ornith. vol. i. p. 442.
,,	,,	,, ,,	Jenyns, Brit. Vert. p. 175.
,,	,,	,, ,,	Gould, Birds of Europe, pt. xiii.
,,	,,	*Outarde barbue,*	Temm. Man. d'Ornith. vol. ii. p. 506.

Otis. *Generic Characters.*—Bill moderate, straight, depressed at the base, the point of the upper mandible curved. Nostrils a little removed from the base, lateral, oval, and open. Legs long, naked above the tarsal joint. Toes three all directed forward, short, united at the base, and edged with membrane. Wings of moderate length, in form rather rounded; the third quill-feather the longest.

The Great Bustard is a bird of such interest as well as magnitude, that every individual capture becomes a subject for ornithological record. Dr. Turner, who wrote in 1544, includes it among his English birds. In the printed catalogue of the contents of the Tradescant Museum, preserved at South Lambeth, in 1656, is, "The Bustard, as big as a Turkey, usually taken by greyhounds on Newmarket Heath;" and Merrett, in his *Pinax rerum naturalium Britannicarum*, in 1667, includes the Bustard as taken on Newmarket Heath and about Salisbury. Montagu notices some instances of the occurrence of this bird in Devonshire, and says that he had seen them in Wiltshire. White of Selborne in that portion of his Journal published by Mr. Jesse in the second volume of his Gleanings in Natural History, says, "Spent three hours of this day, November 17, at a lone farm-house, in the midst of the downs between Andover and Winton. The carter told us that about twelve years before he had seen a flock of eighteen Bustards on that farm, and once since only two." White adds in another place, "Bustards when seen on the downs resemble fallow deer at a distance." In Daniel's Rural Sports, it is stated, "that on the 29th of September 1800, Mr. Crouch of Burford shot a hen Bustard on Salisbury Plain. This bird was killed at the distance of forty yards with a common fowling-piece and with such shot as is generally used for partridge-shooting. There were two other Bustards in company with the one shot, neither of which appeared to be hurt." Markwick in his Catalogue of the Birds of Sussex, published in 1798, says of the Great Bustard, "Sometimes seen on our South Downs." Ray and Willughby mention Royston Heath as a place frequented in their time by this species; and in reference to Bustards, as formerly inhabiting that part of the country, I may state, that Mr. Joseph Clarke, of Saffron Walden, gave me lately a copy of a single paper of Addison's Spectator, No. CCCX., for Tuesday, March 4th, 1712, containing an advertisement, of which the following is an exact copy: "HEYDEN in ESSEX, near WALDEN and ROYSTON, the seat of Sir Peter Soame, Bart., deceased, situate on a gentle hill, with a very large and pleasant prospect, fair gardens, canals, fish-ponds, dove coate, and all sorts of offices without door, woods of large timber, and where is all game in great plenty, even to the Bustard and Pheasant, is to be let, furnished or unfurnished, for 16 years. Enquire at Mr. Chus in Bartly-street, Piccadily, or at Mr. Cooper's, at the Blue Boar in Holborn." To this I may add, that in Melbourne, the parish next below Royston, there is a piece of land which is still known by the name of Bustard-Leys; and Dr. George Thackeray, the Provost of King's College, Cambridge, sent me word that Mr. Townley, the father of the present Mr. Greaves Townley, who lives at Fulbourne, told him that for some years after he first went to live there, Bustards regularly bred on his estate.

Formerly these birds were plentiful in the open tracts about Newmarket Heath, and till within a few years single individuals have occasionally been seen in that neighbourhood. Among other references to Cambridgeshire, I may mention that in January 1830 a young male was shot on Shelford Common, and passed into the collection of Mr. Henson, and in December 1832, a specimen was killed at Caxton, and is preserved in the Museum of the Philosophical Society at Cambridge. A correspondent in the Magazine of Natural History, vol. vi. p. 513, says that the late Duke of Queensberry had three Bustards pinioned on his lawn at Newmarket; and J. Westall, Esq., had one for a long time in his garden at Risby, in Suffolk. The authors of the Catalogue of the Birds of Norfolk and Suffolk, published in 1827 in the fifteenth volume of the Transactions of the Linnean Society, say, "these noble birds still continue to breed in some of the open parts of both counties, though they are become much scarcer than formerly. The places most frequented by them are, Westacre in the former county, and Icklingham in the latter. At both places they are carefully preserved by the proprietors. In the summer of 1819, nineteen were observed together at Westacre. We have twice seen a male Bustard in the neighbourhood of Burnham. It suffered itself to be approached to about the distance of a hundred yards, then walked deliberately a few paces, and took wing without the least difficulty. In flying it moved its wings slowly, more like a Heron than one of the Gallinaceous tribe. Mr. Hady of Norwich has more than once succeeded in domesticating this species." In a note at the foot of page 197 in Mr. Bennett's edition of White's Selborne, it is stated, "that two birds of this kind, male and female, have been kept in the garden ground belonging to the Norwich Infirmary, and have but lately been sold by the owner of them. The male bird was very beautiful and courageous, apparently afraid of nothing, seizing any one that came near him by the coat; yet on the appearance of any small Hawk, high in the air, he would squat close to the ground, expressing strong marks of fear. The female was very shy." The Rev. Richard Lubbock sent me word that a female Bustard bred near Thetford in

1832, and carried off her young ones. This nest was upon a warren, but it is most commonly placed in rye. Mr. Elwes shot a female to a pointer in a turnip field at Congham in the autumn of 1831. The continuation of these notes is as follows:—"I know one instance of a specimen killed on the contrary side of Norfolk to that which they generally affect. About ten years ago a person returning home in the parish of Palling, upon the coast, near Winterton, saw an immense bird walking in a marsh by the road side. He rode home, brought his gun, and shot it; it proved to be a male Bustard of the second year, and is now in the collection of Mr. Postle, a near relation of mine. This is exactly the opposite part of the county to that in which they are generally found. When a boy I remember two or three individuals in a domesticated state. I recollect one of these birds swallowing, in an instant, a thin leather glove which I dropped. The system of weeding out corn in the spring has tended perhaps more than any other cause to the decrease of Bustards; since egg collectors became numerous, a nest is a valuable prize indeed. A very fine bird,—an old male,—is still in preservation, as a stuffed specimen, at the house of a friend in my neighbourhood, which was taken by greyhounds forty years ago, within three miles of Norwich." Among the extracts from the Household Book, A.D. 1519 et seq., for which I am, as before mentioned, under the article Pheasant, at page 316, also indebted to the Rev. Richard Lubbock, are the following:—"July 25th, a reward to Baxter for bringing two young Bustards;" and "Item, a Bustard and a Hernsewe kylled with ye crosbowe." I have been favoured by Thomas Bond, Esq., of the Temple, with extracts from Dugdale's* *Origines Juridiciales*, which, as exhibiting the prices of various kinds of game provided for a feast given in the Inner Temple Hall on the 16th of October 1555, the third year of Philip and Mary, is not without ornithological interest;—namely, Bustards 10*s.* each; Swans 10*s.* Cranes 10*s.* Pheasants 4*s.* Turkeys 4*s.* Turkey chicks 4*s.* Capons 2*s.* 6*d.* Pea chickens 2*s.* Partridges 1*s.* 4*d.* Plovers 6*d.* Curlews 1*s.* 8*d.* Godwits 2*s.* 6*d.* Knots 1*s.* Pigeons 1*s.* 6*d.* a dozen; Larks 8*d.* a dozen; Woodcocks 7*s.* 8*d.* a dozen; Snipes 2*s.* a dozen. To return, however, to the Bustard in the county of Norfolk, I find Mr. Salmon has recorded that "in the spring of 1832, three females resorted to Great Massingham Heath, in Norfolk, for incubation. Their eggs consisted of two pairs and a single one. These were taken away, under the impression that as there was no male bird, they were good for nothing; but the male is said to live apart after the female is impregnated." From Mr. William Borrer, jun., I learn that a very fine female was brought to him, which was killed on the 26th of January, 1838, whilst feeding in a turnip field at Dersingham, near Castle Rising. The base of each of the feathers on the breast of this bird was of a delicate rose colour.

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* I am indebted to another very kind friend for an extract from Dugdale's

In Lincolnshire, I find from Charles Anderson, Esq., that a pair of Bustards bred a few years since on his father's farm at Hawold, and a single Bustard was seen a few winters ago, and was considered to be a stray bird, from the Yorkshire wolds, which were for a long time a favourite locality for them. Mr. Denny, of Leeds, sent me word that a townsman of his remembers seeing Bustards on the wolds at the beginning of the present century. About the

Monasticon Anglicanum, in reference to an early notice of Pheasants, by which it appears that the Abbot of Amesbury obtained a license to kill Hares and Pheasants in the first year of the reign of Henry the First, which commenced on the 2nd of August, 1100.

year 1817, eight Bustards were seen together, in the shooting season, in a large turnip field, in the parish of South Dalton. Within the last fifteen years they were known to breed on a wold, near Malton, and Mr. Hawkridge sent me word that about fourteen years since one was shot on a wold near Scarborough.

Early in February, 1843, E. H. Rodd, Esq., of Penzance, sent me word that a female of the Great Bustard had been shot only a few days before on an open plain between Helston and the Lizard Point. The bird had been observed for some days in a field of turnips close by. This is considered to be the first instance of the capture of the Great Bustard in Cornwall, and the last recorded instance of its being killed in England.

Of this bird, in Scotland, Dr. Fleming observes, that it appears to have been found in the days of Boece; Sibbald, however, seems to view it as rare in his day; and it is now reduced to the rank of a straggler. One was shot in 1803, in Murrayshire, by William Young, Esq., of Borough-head.

M. Nilsson says the Great Bustard is of rare appearance in Sweden; but has been observed in spring. It is found in Russia, and Pennant, in his Arctic Zoology, mentions that it is frequent over all the desert of Tartary, and beyond Lake Baikal. It is a solitary bird, but collects into small flocks at the time of its southern migration, and winters about Astracan.

In Germany, these birds are numerous, but very difficult to approach; the sportsmen of that country use rifles in the pursuit, and practice as many devices to get within shot as are employed by the Highlanders of Scotland, when stalking red deer. The Bustard is a rare bird in Holland.

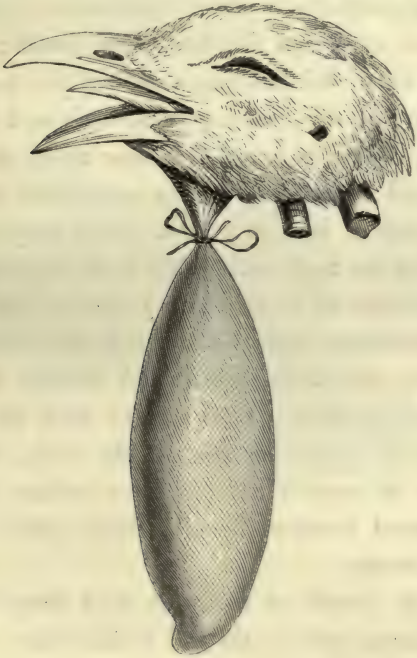
In France, according to M. Vieillot, the Great Bustard, naturally very wild, prefers champaign and stony countries, far from any habitations, and it only approaches villages when deep snows interfere with its means of subsistence; they are in families in autumn, and later in the season these broods unite, forming flocks, consisting of from forty to two hundred individuals. In this state they may be seen from the beginning of December till March, when they again divide and disperse.

The Great Bustard is found in Spain, Provence, Italy, Dalmatia, the Levant, and, according to M. Temminck, on the plains of Greece. The Russian naturalists who accompanied the expedition from their own country to the Caucasus, say, this bird is found in winter at the foot of the mountain, and in the vicinity of the river Don.

So much of the natural history of the Great Bustard is included in the various quotations and notices already inserted, that little remains to be added. These birds are polygamous, the males only attending the females till the latter begin their task of incubation. The female lays two or three eggs in a depression on the bare ground. The eggs are olive-brown in colour, sparingly and indistinctly blotched with greenish broccoli-brown: length two inches eleven lines, by two inches two lines in breadth. The birds feed on green corn, grasses, tréfoil, and other vegetables; are said to kill and eat small mammalia, and from their partiality to marshy ground, I have no doubt they also devour small reptiles. In the summer they conceal themselves in standing corn, generally wheat or rye, and later in the season, in large fields of high turnips; they also frequent chalk pits when they are partly overgrown with bushes or rank vegetation. As an article of food, the flesh of the Bustard is highly esteemed, and Mr. Gould says that on the Continent, the bird is frequently to be seen exposed in the markets for sale. About the year 1817 or

1818, I remember to have seen a pair of Great Bustards, male and female, and very fine specimens, exposed for sale by Mr. Townsend, the poulterer, in Charles-street, St. James's Square. These birds were sold for twelve guineas, and were preserved by Mr. Leadbeater for the purchaser. These were the only examples of the Great Bustard I remember to have seen exposed for sale in the meat. Mr. Townsend bought both the birds in Leadenhall Market, and both of them exhibited marks of having been trapped and caught by the legs.

A remarkable anatomical peculiarity in the male of the Great Bustard, first discovered by Dr. James Douglas, of the College of Physicians in London, is thus described by Edwards in his Gleanings, with a figure. "It is a pouch



or bag to hold fresh water, which supplies the bird in dry places when distant from waters; the entrance into it is between the under side of the tongue and the lower mandible of the bill. I poured into this bag, before the head was taken off, full seven wine pints (which about equals seven pounds of our common weight) before it run over. This bag is wanting in the hen."—There is, however, some reason to doubt whether this is really the use to which the pouch is applied, since it is mentioned by Bewick that one of these birds, which was kept in a caravan, among other animals as a show, lived without drinking. It was fed with leaves of cabbages, and other greens, and also with flesh and bread.

The figure and the descriptions here given are taken from a very fine pair of these birds in the Museum of the Zoological Society.

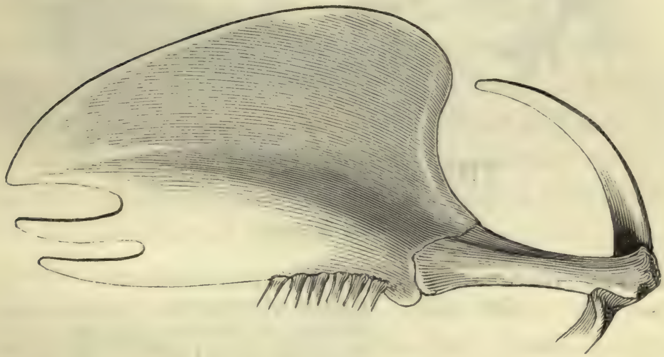
The adult male has the beak clay brown; the irides hazel; the head and the upper part of the neck greyish white; from the chin, passing backwards and downwards on each side, there is a tuft or plume about seven inches long, directed across and partly concealing a vertically elongated strip of bare skin of a bluish grey colour; the lower part of the neck behind, the back, upper tail-coverts and tail-feathers, of an ochreous yellow or pale chestnut, barred transversely with black; the tail-feathers tipped with white; the wing-coverts and tertials white; the primaries black, with white shafts; neck in front, the breast, all the under surface of the body, the thighs, and under tail-coverts white; under surface of the tail-feathers barred transversely with dusky grey; legs, toes, and claws, brown.

The whole length of the male bird forty-five inches. From the carpal joint to the end of the wing, twenty-four inches and a half: the first quill-feather shorter than the second; the second shorter than the third or the fourth, which are the longest in the wing.

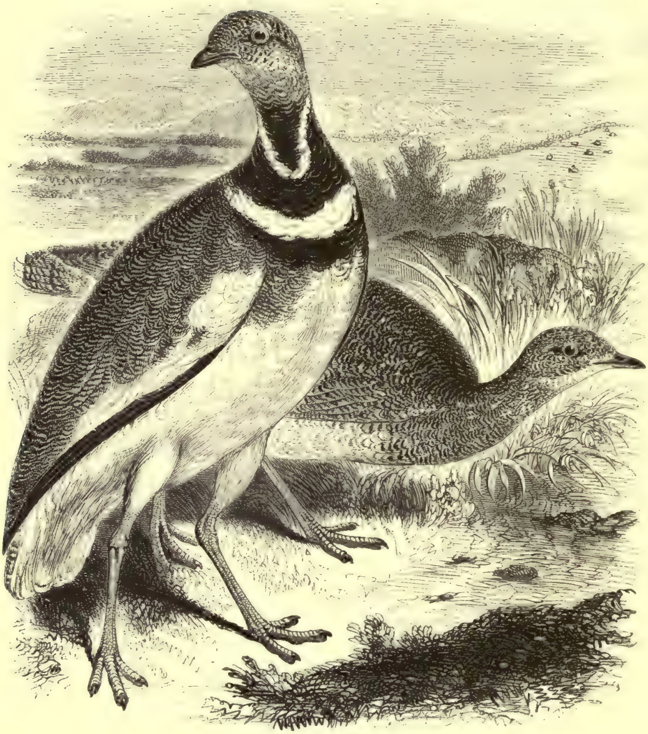
The whole length of the female is thirty-six inches. From the joint to the end of the wing, nineteen inches and a half. The females generally do not exhibit the lateral plumes from the chin, but in the Transactions of the Linnean Society of Bordeaux, M. de Rochebrune has remarked that when the female has arrived at her full growth, at the age of three or four years, she has the same external characters as the male, only somewhat less developed.

Mr. Selby observes that the young at a month old are covered with a buff-coloured down, barred upon the back, wings, and sides with black.

The outline below is drawn, half the natural size, from the breast-bone of a female of the Great Bustard.



RASORES. *STRUTHIONIDÆ.*



THE LITTLE BUSTARD.

Otis tetrax.

Otis tetrax, The Lesser Bustard,	**Penn.** Brit. Zool. vol. i. p. 379.
„ „ *Little* „	**Montagu**, Ornith. Dict.
„ „ „ „	**Bewick**, Brit. Birds, vol. i. p. 368.
„ „ „ „	**Flem.** Brit. An. p. 115.
„ „ „ „	**Selby**, Brit. Ornith. vol. i. p. 447.
„ „ „ „	**Jenyns**, Brit. Vert. p. 175.
„ „ „ „	**Gould**, Birds of Europe, pt. ii.
„ „ *Outarde canepetière,*	**Temm.** Man. d'Ornith. vol. ii. p. 507.

The Little Bustard can only be considered an accidental, and, generally, a winter visiter to this country ; the male has never been killed here in the plumage assumed during the breeding season, that I am aware of ; nor has the nest, or the eggs been found ; and most of the specimens, of which many are recorded, some of them males, have occurred in the winter half year,—that is, from the middle of autumn to the middle of spring, both sexes, during that period, wearing the same livery.

Mr. Thompson, of Belfast, has stated that two birds of this rare species were seen in the county of Wicklow on the 23rd of August 1833, and one of them was shot by Mr. Reside, for whom it was set up by Mr. W. S. Wall, bird-preserver, Dublin. Mr. Couch mentions that two or three specimens have occurred in Cornwall, one of which he has seen. Three instances are also recorded of the appearance of this bird in Devonshire, and a fourth was obtained so lately as the 15th of November 1839. The Earl of Malmesbury has in his collection a female specimen killed at Heron Court, near Christchurch, Hants. To F. Holme, Esq., I am indebted for the knowledge of a specimen that was shot on Denton Common in Oxfordshire, in December 1833. One was killed at Chatham, in Kent, in January 1834. Three specimens have been obtained in Essex, one of which, a female, killed at Harwich in January 1823, is in my own collection ; a second was killed at Little Clacton in the winter of 1824, and a third very recently near Chelmsford, for the knowledge of the occurrence of which I am indebted to Mr. G. Meggy. This species has been killed in Suffolk, in Cambridgeshire, and several times in Norfolk, one example of which was in the collection of the late Mr. Sparshall of Norwich. In October 1839, two Little Bustards were seen near Birmingham, as I learn from D. W. Crompton, Esq., and one of the two was killed. Very early in the same year, 1839, one specimen was killed at Boythorp, Sledmere Wolds, near Scarborough, of which Mr. Hawkridge sent me notice. Mr. Selby has recorded two instances of the occurrence of this rare bird in Northumberland, which becomes still more rare on proceeding northward, and T. M. Grant, Esq., of Edinburgh, has supplied me with a notice of one killed near Montrose, in December 1833, which is the only one, I am aware of, that has been killed in Scotland. Professor Nilsson ranks the Little Bustard among the rarest of the occasional stragglers to Sweden. It has been recorded as killed in Lapland, on the authority of Acerbi, but Acerbi's description proves that his bird was the Wood Grouse.*

Pennant, in his Arctic Zoology, says that the Little Bustard is frequent in the southern and south-western parts of Russia, migrating in small flocks, and is found also on the deserts of Tartary. It is a rare bird in Germany, more common in France, and is found in Spain, Provence, Sardinia, Italy, and Sicily. It is found in North Africa, Turkey, and Greece. Specimens of the Little Bustard have been sent to the Zoological Society from Erzeroom by Keith Abbott, Esq., and by Messrs. Dickson and Ross; the latter gentlemen in their notes state that this bird is very common in ploughed fields on the skirts of the marsh. M. Menetries, in his Catalogue, observes, that this species is very common at the foot of Mount Caucasus, and particularly so towards the shores of the Caspian Sea. Near Baiku, this author says, I saw in December immense flocks of these birds going in the direction from east to west; of all those seen, or of those procured and examined, not a single male had any black on the throat.

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* Travels through Sweden, Finland, and Lapland, vol. ii. page 229.

The nest is on the ground, among herbage which is sufficiently high to hide the bird; the eggs vary in number, according to different authors, from three to five; the length two inches, the breadth one inch six lines; the colour, of one in my own collection, uniform olive brown; but I have seen them slightly clouded with patches of darker brown.

The food of this species consists of herbs, grain, and insects; in the specimen killed at Harwich, in my own collection, the body of which was examined, the stomach contained parts of leaves of the white turnip, lungwort, dandelion, and a few blades of grass. The flesh had the appearance and flavour of that of a young hen Pheasant. These birds inhabit open countries, and fly with great speed and power.

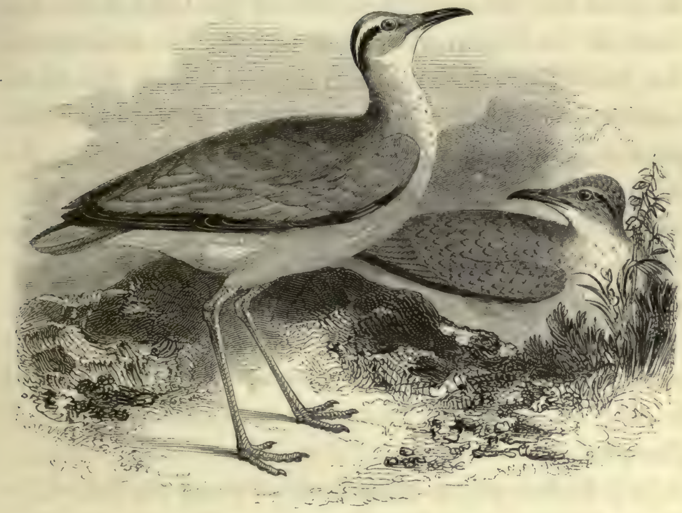
The adult male, when in the plumage peculiar to the breeding-season, has the beak brown; the irides golden yellow; the top of the head pale chestnut mottled with black; cheeks, ear-coverts, the front and sides of the neck, bluish grey, bounded inferiorly by a border of black passing to the back of the neck; below this a narrow white ring all round the neck, and below this a broad collar of black, with a gorget of white, and another of black at the bottom of the neck in front; shoulders, back, scapulars, tertials, and upper tail-coverts, pale chestnut brown, streaked irregularly with numerous narrow lines of black; all the wing-coverts, and the base of the primaries, white, the distal half of the primaries greyish black; the secondaries patched with black and white; the base of the tail-feathers white, the ends mottled with black and buffy white, crossed with two narrow bars of black, the extreme tips white; the breast, and all the under surface of the body, white; legs, toes, and claws, clay-brown.

The whole length about seventeen inches. From the carpal joint to the end of the wing, nine inches and three-quarters; the first quill-feather almost an inch shorter than the second, which in the male described was as long as the third, and both longer than the fourth, the second and third being the longest in the wing.

The males that are killed in the winter half-year have the feathers of the neck of pale chestnut streaked with black, like the same part in the female, which does not change with the season.

The adult female is of the same size as the male, and has the head and neck mottled and streaked with black on a ground of pale chestnut; the chin white; the neck below without any appearance of transverse bars at any season; the wing-coverts have less white than those of the males; the white feathers on the breast, sides, and flanks, are marked with short transverse bars of black. Females in other respects resemble the males.

GRALLATORES. *CHARADRIIDÆ.*



THE CREAM-COLOURED COURSER.

Cursorius Europæus.

Cursorius	*Europæus,*	*Cream-coloured*	*Plover,*	Montagu, Ornith. Dict.
,,	,,	,,	,,	Bewick, Brit. Birds, vol. i. p. 383.
,,	*Isabellinus,*	,,	*Courser,*	Flem. Brit. An. p. 112.
,,	,,	,,	*Swiftfoot,*	Selby, Brit. Ornith. vol. ii. p. 217.
,,	,,	,,	*Courser,*	Jenyns, Brit. Vert. p. 176.
,,	,,	,,	,,	Gould, Birds of Europe, pt. vii.
,,	,,	*Courtvite Isabelle,*		Temm. Man. d'Ornith. vol. ii. p. 513.

Cursorius. *Generic Characters.*—Beak shorter than the head, straight, and rather depressed at the base, slightly convex towards the end, and pointed. Nostrils oval, with a small protuberance. Tarsi long and slender; toes, three only, all in front, middle toe almost as long again as the lateral toes. Wings long, rather pointed; the first and second quill-feathers the longest in the wing.

The commencement of the Fourth Order, the Grallatores, or Wading Birds, may be considered also as the commencement of the Water Birds, when two systematic divisions only are adopted,—those of the Land Birds and those of the Water, which two divisions, in reference to the ornithology of the British Islands, divide the whole number of birds into two very nearly equal parts. The present series commences with those birds among the Waders which have the closest relation to the Bustards.

The Cream-coloured Courser was first described by Buffon from a specimen killed in France; but this bird is rarely found north of the Mediterranean. It is a native of Africa, Egpyt, Nubia, and Abyssinia, and is said to be more numerous in the latter country than elsewhere, and is only an accidental visiter to the southern parts of Europe.

It is in fact only a summer visiter along the line of the North African coast, from Tangiers to Tripoli. At Tangiers it is very rare, and from the great resemblance between the colour of this bird and that of the sand of the desert, it is with difficulty seen, even when flying, since it then keeps very close to the ground. Dr. Dickson says of one shot at Tripoli, this bird is probably an inhabitant of the inland lakes of Africa, for it makes its appearance here during the months of July and August, and quits us again for the winter. It frequents pools and other moist situations, where it is seen occasionally in astonishing numbers. It is a shy bird, and reckoned good eating.

One example of this very rare bird was shot by William Hammond, Esq. of St. Alban's Court, near Wingham, in East Kent, who presented the specimen to Dr. Latham, with the following account:—"He first met with it running upon some light land; and so little fearful was it, that after he had sent for a gun, one was brought to him, which having been charged some time, did not readily go off, and in consequence he missed his aim. The report frightened the bird away; but after making a turn or two, it again settled within a hundred yards of him, when he was prepared with a second shot, which despatched it. It was observed to run with incredible swiftness, and, at intervals, to pick up something from the ground; and was so bold, as to render it difficult to make it rise from the ground, in order to take a more secure aim on the wing. The note was not like any kind of Plovers, nor, indeed, to be compared with that of any known bird."

Dr. Fleming, in his British Animals, records one that was shot in North Wales in 1793 by Mr. George Kingston, of Queen's College, Oxford.

A third specimen is recorded in Atkinson's Compendium. This example was shot near Wetherby, in April 1816; it was seen alone, frequenting a piece of dry fallow ground, over which it ran with great swiftness, making frequent short flights, and was approached without difficulty. The occurrence of this third example has been further confirmed to me by letter from Mr. Denny of Leeds, who sent me word that it was shot by Mr. Rhodes, a brewer of Leeds, and that the specimen passed into the possession of George Walker, Esq. of Killingbeck Lodge. From this bird several drawings were made.

A fourth example is recorded by George T. Fox, Esq. of Durham, in the third volume of the Zoological Journal, page 492. "This bird was shot on the 15th of October, 1827, under Timberwood Hill, in Charnwood Forest, Leicestershire, by a tenant of Mr. T. Gisborne, who resides at Charley Mill, near that place. He described it as coming flying over his head, uttering a cry with which he was unacquainted, and it settled near him. This rare subject is the property of the Rev. T. Gisborne, F.L.S. of Yoxall Lodge, Staffordshire, to whose ornithological taste his son knew the possession of it would be a subject of congratulation. He liberally furnished the use of it to Mr. Selby and Mr. Bewick, for the purpose of engraving figures of it for their works on British Ornithology." The representation of this Cream-coloured Courser was the last bird engraved by Bewick; and I am indebted to the kindness of George C. Atkinson, Esq. of Newcastle, for a proof of this subject, sent me with a copy of his "Sketch of the Life and Works" of the distinguished artist.

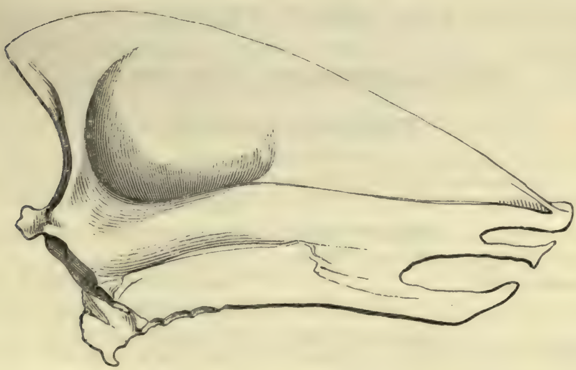
Of the habits, nidification, or eggs of this species little further is known. M. Vieillot notices that it has occurred twice in France. M. Temminck mentions one that was obtained in Germany, and preserved in a collection of Natural History at Darmstadt. Polydore Roux includes it among his Birds of Provence. In the Museum at Geneva there is an example that was killed in Switzerland; and it has been obtained in Spain and Italy; but the specimens of this bird preserved in collections have generally been procured from Barbary or Abyssinia. It was found by the Russian naturalist in the plains at the base of the Caucasus.

Four other species of this same genus are now known; two of which belong to Africa and the South of Europe: the other two species are found in India.

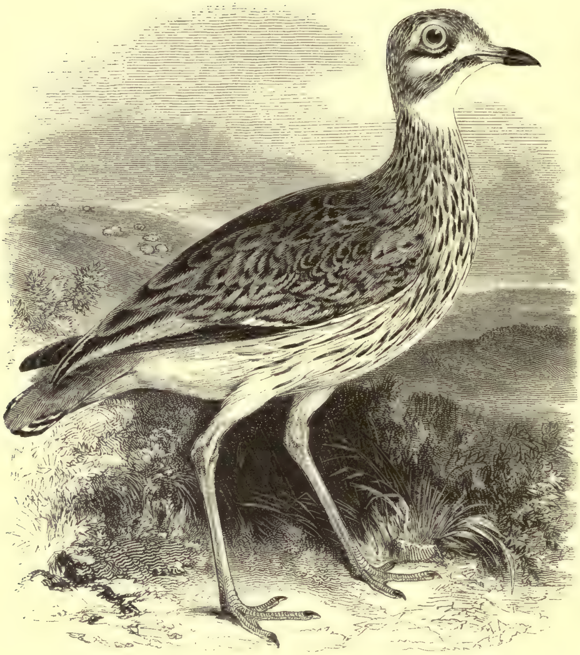
The beak is nearly black at the point, brown at the base; the irides hazel; the top of the head buff-colour, the hinder part grey; above the eye, and passing from thence over the ear-coverts to the nape of the neck is a white streak; below this, from the eye, a black streak, both meeting behind: the neck, back, and all the upper surface of the body and wings, pale wood-brown, tinged with reddish buff; wing-primaries black; the tail-feathers, with the exception of the middle pair, have an angular black spot near the end. The chin white; the front of the neck, the breast, and under surface of the body, buffy white, palest on the vent and under tail-coverts; legs and toes cream colour; the claws brown.

The whole length ten inches and one quarter. From the carpal joint to the end of the wing, six inches: the form of the wing-pointed, the first and second quill-feathers being nearly of equal length, and the longest in the wing.

The sexes in plumage resemble each other; but, as usual in such cases, the young birds of the year differ from both. These young have the feathers clouded with two shades of pale brown, with dark, irregular transverse lines of dusky ash-colour, as shown in the representation; the lines round the back of the head as yet not very conspicuous; the dark feathers of the wing edged on the inner web with buff colour.



GRALLATORES. *CHARADRIIDÆ.*



THE GREAT PLOVER.

NORFOLK PLOVER, AND STONE CURLEW.

Œdicnemus crepitans.

Otis	*œdicnemus*,	*Thick-kneed Bustard*,	Penn. Brit. Zool. vol. i. p. 380.
Charadrius	"	" "	Montagu, Ornith. Dict.
"	"	*The Great Plover*,	Bewick, Brit. Birds, vol. i. p. 371.
Oidicnemus Bellonii,		*Common Thick-knee*,	Flem. Brit. An. p. 114.
Œdicnemus crepitans,		" "	Selby, Brit. Ornith. vol. ii. p. 250.
"	"	" "	Jenyns, Brit. Vert. p. 177.
"	"	*Thick-kneed Bustard*,	Gould, Birds of Europe, pt. xi.
"	"	*Œdicneme criard*,	Temm. Man. d'Ornith. vol. ii. p. 512.

Œdicnemus. *Generic Characters.*—Beak stout, strong, and straight, a little depressed at the base; ridge of the upper mandible elevated, under mandible with an angle at the symphisis. Nostrils placed in the middle of the beak, extending longitudinally as far forward as the horny portion, open in front, pervious. Legs long, slender; three toes only, directed forwards, united by a membrane as far as the second articulation. Wings moderate; second quill-feather the longest in the wing. Tail graduated.

The Great Plover, Norfolk Plover, or Stone Curlew, names referring to qualities or habits in this species, is a summer visiter to this country, arriving here in April, and leaving again at the end of September or in October, and like other summer visiters coming to us from the south. It is accordingly much more numerous in the southern and south-eastern counties of England than far to the west, or to the north, but, possessing great powers of flight, the range of this bird is not so limited here as has been supposed, and is otherwise, as will be shown, of great geographical extent.

Mr. Thompson tells me that it is an extremely rare visitant to Ireland. According to Mr. Couch, Dr. Edward Moore, and Mr. Gale, this bird has been killed three or four times in Cornwall, and is found, but is not plentiful, in Devonshire and Dorsetshire. Peter Ryland, Esq. includes it in his Catalogue of the Birds of Lancashire; and Mr. Blyth mentions having received the young from Worcestershire. In Hampshire, Sussex, Kent, Essex, Suffolk, Cambridgeshire, and Norfolk, it is common. The late Mr. J. D. Hoy, in a letter sent to me, says, there is no part of England where the *Œdicnemus crepitans* so abounds as upon the sandy plains of Norfolk; great numbers have been caught in most seasons by the Subscription Heron Hawks at Didlington Hall, Norfolk; they have been known to take refuge in a rabbit-burrow when pursued by the Hawk.

Mr. J. D. Salmon, then of Thetford, says of this species, "that it is very numerously distributed over all our warrens and fallow lands during the breeding-season, which commences about the second week in April, the female depositing its pair of eggs upon the bare ground, without any nest whatever; it is generally supposed that the males take no part in the labour of incubation; this I suspect is not the case: wishing to procure for a friend, a few specimens in their breeding-plumage, I employed a boy to take them for me; this he did by ensnaring them on the nest, and the result was that all those he caught during the day proved, upon dissection, to be males. They assemble in flocks previous to their departure, which is usually by the end of October; but should the weather continue open, a few will remain to a much later period; I started one as late as the 9th of December, in the autumn of 1834." Montagu mentions an instance of this bird being killed in Devonshire as early as February in the year 1807.

The Great Plover visits Lincolnshire; and Mr. Williamson in reference to the appearance of this species in the vicinity of Scarborough, says, "they breed on the fallows, and often startle the midnight traveller by their shrill and ominous whistle. This is supposed to be the note so beautifully alluded to by Sir Walter Scott in his poem of the Lady of the Lake,—

"And in the Plover's shrilly strain,
The signal whistle 's heard again,"

for it certainly sounds more like a human note than that of a bird."

Further north than Yorkshire I do not trace it.

These birds are usually seen in unenclosed countries or where the fields are large; they frequent sheep walks, fallow lands, heaths, and warrens, and when trying to get a shot at them, I may remark, that from the bare and exposing nature of the ground, I have always found them very difficult of approach. The eggs are pale clay brown, blotched, spotted, and streaked with ash-blue and dark brown; two inches two lines in length, by one inch seven lines in breadth; and so closely do these eggs, and also the chicks in their downy covering, assimilate in colour with the soil and the stones around them, that they are both very difficult to find.

The large and prominent eye in this species indicates a bird that moves and feeds by twilight or later. Their food is worms, slugs, and insects; they are believed also to kill and devour small mammalia and small reptiles, for which their stout frame and large beak seem sufficiently powerful. Mr. Selby and the Rev. L. Jenyns found the remains of large coleopterous insects, of the genus *Carabus*, in the stomach of the Great Plover, and these beetles, it will be recollected, do not begin to move about till the close of day.

The Great Plover annually visits Germany, and is abundant in France, Spain, Provence, Sardinia, Italy, Sicily, and, southward, to Africa, Madeira, and even to southern Africa; Dr. Andrew Smith having obtained specimens during the progress of the exploring expedition from the Cape northwards.

Eastward it is found in Corfu, Turkey, and the Grecian Archipelago. Mr. Strickland, when at Smyrna, was told that it occurs in Asia Minor, of which there is little doubt, the Zoological Society having received specimens from Trebizond, and the Russian naturalist, M. Hohenacker, having also found it on the plains between the Black and the Caspian Seas. Mr. Blyth has obtained it in India.

In the adult bird, the beak is black at the point, the base greenish yellow; the irides golden yellow; the top of the head and back of the neck pale wood-brown, each feather with a streak of black in the centre; from the base of the upper mandible a light-coloured streak passes backward under the eye to the ear-coverts; from the base of the lower mandible a brown streak passes below the light-coloured one to the ends of the ear-coverts; the feathers of the back, wing-coverts, tertials, and upper tail coverts, pale brown, each feather with a dark brownish black, longitudinal streak in the line of the shaft; wing primaries almost black, the first and second with a white patch towards the end; the tail-feathers with the basal halves mottled with two shades of brown, the third portion white, the ends black; the outside tail-feathers shorter than those in the middle. The chin and throat white; the neck and breast pale brownish white, each feather streaked along the centre with blackish brown; belly, sides, and flanks, almost white, with long, narrow, longitudinal streaks; vent and under tail-coverts buffy white, without streaks; legs and toes yellow; the claws almost black.

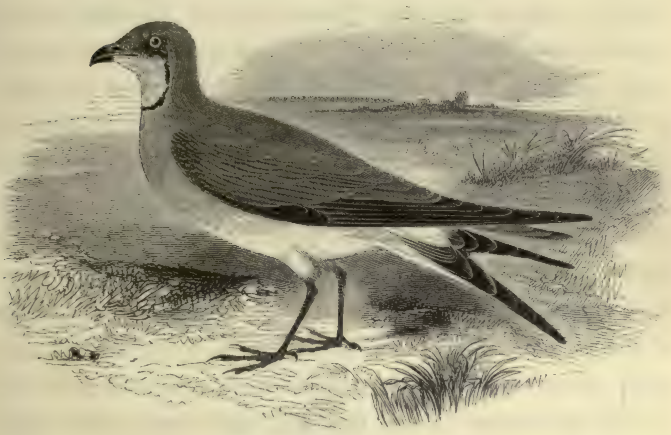
The whole length seventeen inches. The wing, from the carpal joint to the end, nine inches and three-quarters: the first and second quill-feathers nearly equal in length, and the longest in the wing.

The plumage in the two sexes is nearly similar.

In young birds the markings of the plumage are less distinct.

The breast-bone of this species is figured at the bottom of page 435.

GRALLATORES. *CHARADRIIDÆ.*



THE COLLARED PRATINCOLE.

Glareola torquata.

Glareola Austriaca,	*Austrian Pratincole,*	Penn. Brit. Zool. vol. ii. p. 110.
" "	" "	Montagu, Supp. Ornith. Dict.
Hirundo Pratincola,	" "	Bewick, Brit. Birds, vol. i. p. 309.
Glareola torquata,	" "	Flem. Brit. An. p. 94.
" "	*Collared* "	Selby, Brit. Ornith. vol. ii. p. 213.
" *Pratincola,*	" "	Jenyns, Brit. Vert. p. 216.
" *torquata,*	" "	Gould, Birds of Europe, pt. vii.
" "	*Glaréole à collier,*	Temm. Man. d'Ornith. vol. ii. p. 500.

Glareola. *Generic Characters.*—Beak short, convex, compressed towards the point, the upper mandible curved throughout the distal half of its length. Nostrils basal, lateral, pierced obliquely. Legs bare for a short space above the tarsal joint; long and rather slender; three toes in front, one behind; the middle toe united by a short membrane to the outer toe; the inner toe free; the hind toe articulated upon the tarsus; claws long and subulate. Wings very long, the first quill-feather considerably the longest.

A living example of this species was preserved for some months in the aviary at the Gardens of the Zoological

Society. It was very quiet in confinement, and had a habit of throwing the head back, as if looking upwards. M. Temminck says it frequents the banks of rivers, and the marshy margins of large lakes, making its nest among rushes or other dense aquatic vegetation. I have, however, very lately learned something more. Among a collection of birds, recently presented to the Zoological Society by the son of Drummond Hay, Esq., and which had been shot by this young gentleman in the vicinity of Tangiers, were two skins of the Pratincole. On making inquiry of the donor in reference to the Pratincole particularly, I learned that the habits of this bird corresponded closely with those of our Plovers, frequenting sandy plains, flying and running with great rapidity; forming a slight nest in any accidental depression in the dry soil, and laying four eggs. One example of this bird's egg was given to the Society; and this zealous young Ornithologist had seen others, which were all alike. The egg measures one inch two lines in length, by eleven lines and a half in breadth; it is of a pale buffy stone-colour, marked with small round spots of bluish grey and dull black. This egg immediately reminds the observer, who is acquainted with the eggs of our birds, of those of the Ring Plovers, by its colours and markings. The Pratincole has been arranged by some authors with the Swallows, by others near the Rails: but I believe, with Mr. Selby, that it ought to be included in the family of the Plovers. I have lately obtained a skeleton of our Pratincole, the breast bone of which, with its double emargination, so much like those of the Bustards and Plovers, confirms me in my view, that it is allied to the Plovers, and I have so placed it accordingly.

The Pratincole is an inhabitant of the temperate and warmer parts of Europe, Africa, and Asia; and from its great powers of flight, indicated by its long wings, it has, as might be expected, an extensive geographical range.

Mr. Bullock, of the London Museum, in the eleventh volume of the Transactions of the Linnean Society, thus records the first captures of this species in this country.

"The first instance of this bird having been killed in Britain occurred in 1807, when one was shot in the neighbourhood of Ormskirk in Lancashire: it was preserved by Mr. J. Sherlock, of that place, from whom I purchased it a few days afterwards. On the 16th of August 1812, I killed another specimen of this bird in the Isle of Unst, about three miles from the northern extremity of Britain. When I first discovered it, it rose within a few feet and flew round me in the manner of a Swallow, and then alighted close to the head of a cow that was tethered within ten yards' distance. After examining it a few minutes, I returned to the house of T. Edmondson, Esq. for my gun, and, accompanied by that gentleman's brother, went in search of it. After a short time it came out of some growing corn, and was catching insects at the time I fired; and, being only wounded in the wing, we had an opportunity of examining it alive. In the form of its bill, wings, and tail, as well as its mode of flight, it greatly resembles the genus *Hirundo;* but, contrary to the whole of this family, the legs were long, and bare above the knee, agreeing with *Tringa;* and, like the Sandpipers, it ran with the greatest rapidity when on the ground, or in shallow water, in pursuit of its food, which was wholly of flies, of which its stomach was full."

The bird killed near Ormskirk is in the collection of the Earl of Derby. The other remained in Mr. Bullock's possession till the sale of the contents of his museum in 1819;

when I find, by a reference to my priced catalogue, that this specimen from Shetland produced 8*l.* 8*s.*, and was transferred to the British Museum.

Mr. Joseph Clarke, of Saffron Walden, sent me word that a pair of Pratincoles was shot on the Breydon-wall near Yarmouth, in May 1827, by John Bessy, a fisherman, and sold to Isaac Harvey, a bird preserver, who resold them for 7*l.* The occurrence and capture of this pair of Pratincoles is mentioned in Paget's sketch of the Natural History of Yarmouth and its neighbourhood (page 10).

From Mr. F. Holme I learned, that a Pratincole was shot by Frederick Oats, Esq., of Branston Hall, near Lincoln, on the 15th of August 1827, while flying about much like a Swallow, and near the ground.

The Rev. Leonard Jenyns sent me notice of a Pratincole shot in Wilbraham Fen, Cambridgeshire, in May 1835 ; and I have since ascertained that this specimen is now in the collection of J. T. Martin, Esq., of Quy Hall, in that county. In May 1840, a Pratincole was shot upon the shore of the harbour of Blakeney in Norfolk, by Henry Overton, a fowler, and passed into the possession of Mr. John Sparham, by whom it was presented to Henry Rogers, Esq., solicitor, at Thetford.

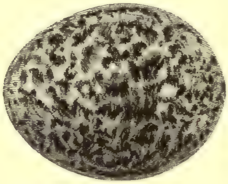
The bird is rare in Holland, but is occasionally seen in Germany, France, Provence, Switzerland, and Italy ; it is found in Sicily, but only from spring till autumn ; it is more plentiful in Dalmatia, and other eastern parts of Europe. M. Temminck mentions that it breeds in Sardinia, and has been seen at Malta. It is said to inhabit Senegal ; I have seen specimens from Tangiers, Algiers, and Tripoli. The Rev. John White obtained this species at Gibraltar, and Linnæus in the fourth letter of those already referred to, writes, *Pratincolam antea non vidi; ad Grallas spectat et proprii generis est.* This species has also been observed at Cairo, Smyrna, Trebizond; and in the country about the Caucasus it was seen by M. Menetries in considerable flocks: the birds squatted close to the ground, with outstretched wings, and allowed a near approach. The Pratincole is also found in Tartary, but is said not to go farther north in that direction than latitude 53°.

The beak is curved, and almost black, and Mr. Bullock says, that whilst living, the edges of both mandibles, and the base of the lower one, were bright scarlet orange; the irides light brown; the head, the neck behind, the back, scapulars, wing-coverts and tertials, nearly uniform clove brown; primaries nearly black; upper tail-coverts white; tail very much forked, the feathers white at the base, the other part dark brownish black; the outer feather on each side as long again as those in the middle; the chin white; the throat pale buff, with a crescentic line of black ascending to each eye; breast brownish buff; belly, thighs and under tail-coverts white; axillary plume, and under wing-coverts bay; the legs reddish purple brown.

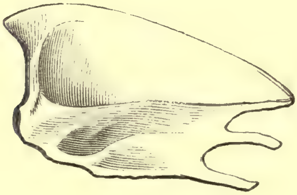
In the young bird the clove brown feathers of the back, and the wing-coverts, the secondaries and tertials, have pale-reddish brown margins; the tail-feathers shorter, and much less forked; throat pale brown, the crescentic collar indicated by dark brown spots; breast varied with two shades of brown; belly, and under surface of the body, and tail feathers, greyish white.

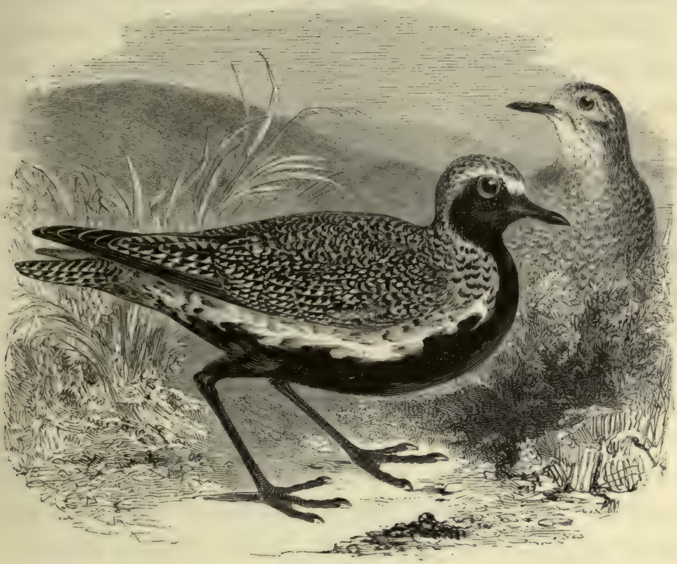
Females are said to resemble the males. The whole length of an adult bird near ten inches. From the carpal joint to the end of the first quill-feather, seven inches.

The egg of the Pratincole is so great a rarity, that I have endeavoured to give a representation of it, by which it may be known. It is found on the ground, in barren situations: the bird does not build a regular nest, but merely collects a few straws.—Zool. Proceedings.



The outline below represents the breast-bone of the Pratincole.





THE GOLDEN PLOVER.

YELLOW PLOVER. GREEN PLOVER.

Charadrius pluvialis.

Charadrius	*pluvialis,*	*Golden*	*Plover,*	PENN. Brit. Zool. vol. ii. p. 98.
"	"	"	"	MONTAGU, Ornith. Dict.
"	"	"	"	BEWICK, Brit. Birds, vol. i. p. 376.
"	"	*Green*	"	FLEM. Brit. An. p. 113.
"	"	*Golden*	"	SELBY, Brit. Ornith. vol. ii. p. 231.
"	"	"	"	JENYNS, Brit. Vert. p. 177.
"	"	"	"	GOULD, Birds of Europe, pt. i.
"	"	*Pluvier doré,*		TEMM. Man. d'Ornith. vol. ii. p. 535.

CHARADRIUS. *Generic Characters.*—Bill straight, compressed, shorter than the head; the end of the upper mandible horny, pointed, and slightly bent; nasal furrow elongated. Nostrils basal, lateral, linear, longitudinally cleft in the membrane of the furrow. Legs of moderate length, sometimes rather elongated, naked above the tarsal joint. Toes three only, all directed forwards, the outer toe slightly connected at the base to the middle toe. Wings of moderate length, pointed in shape; the first quill-feather the longest.

The true Plovers, at which we have now arrived, are birds of great powers of flight, and have also, as might be expected, extensive geographical range. They associate and perform their various migrations in flocks, which are more or less numerous, depending on the species, and are only found in pairs during their season of reproduction. Some of the species are remarkable for assuming in the spring, and retaining during summer, a plumage differing considerably from that which distinguishes them from the time of the autumn moult through the winter till the following spring. This alteration of colour, which is common to both sexes, consists, in the Golden Plover, of a decided change from a dull greyish white to black, which pervades the whole of the under surface of the bird from the chin to the belly. Some new feathers are obtained in the spring, which are black, while the old white feathers of winter may be seen in change to black, some of them bearing almost every possible proportion of well defined black and white on the same feathers, the colouring secretions having equal influence over the old as well as the new feathers; such birds are said to be subject to a double moult, but the spring moult is only partial, not affecting the strong feathers of the wings and tail; the entire moult, including the flight and tail-feathers, only occurs once in each year, and that in the autumn.* Male birds are frequently observed to have acquired an alteration in the colour of their feathers more rich and perfect than that of the females; but this is not always the case, as the extent and perfection of the change appears to depend upon the constitutional vigour and powers of the individual bird, whether male or female, and I have occasionally seen female specimens in a summer dress as rich and as perfect as that of the finest male. The plumage, during this assumption of colours or tints peculiar to the breeding-season, is called by French naturalists *Plumage des Noces;* by some English authors it has been styled the nuptial dress, and I once heard a poulterer call them the bird's wedding feathers. The French term *Pluvier* is said to have been applied to the Plover, "*pour ce qu'on le prend mieux en temps pluvieux qu'un nulle autre saison.*" Our word Plover is derived from the French *Pluvier*.

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* See observations on the laws which appear to influence the assumption and changes of plumage in birds in the Transactions of the Zoological Society, vol. i. page 13.

The Golden Plover is found during summer breeding on the high hills and swampy grounds of the North of England and Scotland. Mr. Thompson of Belfast, says it is common in Ireland, breeding in the least-frequented bogs throughout that country. It visits the Cheviot Hills, and other high ground of the border counties in the North of England every year. Mr. Don says it breeds on the hills of Forfarshire, as noticed in his account of the native plants and animals of that county, appended to Lightfoot's Flora Scotica, which was published at the expense of Pennant. Mr. Selby says of this bird in Sutherlandshire, that "it is plentiful throughout the county, but particularly abundant in the district between Lairg and Tongue, the parish of Durness, Scourie, &c. Sutherland appears to be one great breeding-station of this species." In the Hebrides, Mr. Macgillivray observes, "I have often gone out to shoot them at night by moonlight, when they seem as actively engaged as by day, which was also the case with the Snipes; but I seldom succeeded in my object, it being extremely difficult to estimate distances at night. The numbers that frequent the sandy pastures and shores of the outer Hebrides is astonishing. Dr. Neill, Mr. Salmon, and

Mr. Dunn, have recorded it as common in the Orkney and Shetland Islands.

Professor Nilsson and Mr. Lloyd mention the Golden Plover as annually visiting Sweden; Mr. Hewitson saw it in flocks on the cultivated ground in the south-western part of Norway; Mr. William Christy saw it at Hammerfest, and Linnæus mentions having seen plenty during his tour in the Lapland Alps. It goes to the Faroe Islands, to Iceland, and Greenland every summer; and was seen on different occasions by the Arctic voyagers from this country as far to the northward and westward as the North Georgian Islands and Felix Harbour. Dr. Richardson, in the Fauna Boreali-Americana, says, "that the breeding quarters of this well-known bird are the barren grounds and the coasts and islands of the Arctic Sea. It hatches early in June, and retires southwards in August. Numbers linger on the muddy shores of Hudson's Bay, and on the sandy beaches of rivers and lakes in the interior, until the hard frosts of September and October drive them away. At this period they are very fat, and are highly prized by the epicures of the fur countries. They make but a short stay, in Pennsylvania, and are said to winter beyond the United States." There appears, however, to be some doubt whether the bird which goes so far south as to winter beyond the United States is the true *Ch. pluvialis* of European naturalists. Sir William Jardine, Bart., in the second volume of his illustrated edition of Wilson's American Ornithology, has given the specific characters of *Ch. pluvialis* and *Ch. virginianus* in parallel columns: the distinctions are conspicuous; and the Prince of Musignano has not included the *Ch. pluvialis* in his recently published List of the Birds of North America. Two examples of Golden Plover from North America in the

Museum of the Zoological Society differ from our British bird, and appear to me to be identical with the Golden Plover found in Asia, to be hereafter referred to. North America may produce two species of Golden Plover; but the figure of the Golden Plover in Wilson's work exhibits in the beak, in the lengthened legs, and in the extent of the bare part above the joint, as well as some other particulars, the characters of the Golden Plover of Asia, and one specimen of a Golden Plover from South America at the Zoological Society, is similar to those received from the Society Isles and from Sydney, which do not differ from the Asiatic bird.

Our Golden Plover lays but four eggs, which are large in proportion to the size of the bird, but it has only one brood in the season. The eggs are of a yellowish stone colour, blotched and spotted with brownish black; the length two inches by one inch four lines in breadth. About the end of May, or beginning of June, Mr. Selby observes, the females begin to lay, making but little artificial nest, a small depression in the ground amidst the heath being generally taken advantage of, and lined with a few dry fibres and stems of grass. The young, when excluded, are covered with a beautiful parti-coloured down of yellow and brown; they quit the nest as soon as hatched, and follow their parents till able to fly and support themselves, which is in the course of a month or five weeks. The old birds display great anxiety in protecting their young brood, using various stratagems to divert the attention of an enemy. They feed on worms, slugs, and insects in various states. They have a shrill whistling note, and may be deceived and decoyed within shot by a skilful imitation.

In autumn the various broods associate, forming flocks, and together wing their way southwards. They are observed in great numbers through the winter on moors, heaths, downs, and large open fields, in most of the southern counties, and many resort to the sea shores. They are excellent birds for the table.

The Rev. Richard Lubbock, in his Fauna of Norfolk, says of these birds, " a great many are shot in the marshes. The early dawn is the time at which our fen-men seek them; they then fly about in close bodies, and will pass very near to any one remaining perfectly still. In the middle of the day they are very difficult of access. They seem to divide their time between the marshes and the uplands. If they are in a marsh all day they often move off to a ploughed field just as it is dusk, and *vice versa;* if upon arable land, they go down to the marsh for the night, and it is truly called *pluvialis*, from its restlessness before bad weather. A few years back, one day in the end of December, I stood upon an eminence overlooking a level of marshes; the day was beautifully mild and bright. I was struck by the perpetual wheelings, now high, now low, of large flocks of this bird and the Peewit. They were not still for a moment, and yet I could discover no cause of disturbance. Some hours afterwards I went again to the same hill, and found them in the same perturbed state. I was so persuaded that this restlessness was the harbinger of stormy weather, that I wrote a letter excusing myself on that plea from fulfilling an engagement at a distance. The next morning came, calm and mild as the preceding; the plovers, however, had all departed, not one was to be seen. About 5 P.M. the wind began to howl, signs of tempest came on, and before morning so much snow fell, that in the lanes were drifts six and seven feet in depth."

From the northern parts of the European Continent they also return after the breeding-season, inhabiting for a time

France, Provence, Sardinia, Italy, Sicily, and the shores of Africa. The Zoological Society have received specimens from Trebizond; and the Russian naturalists found them on the plains between the Black and the Caspian Seas.

I have not been able to trace our Golden Plover farther to the eastward than this. After a close examination of various examples in the collections of the Linnean and Zoological Societies from India, Java, New Holland, and the Society Isles, I believe, with Sir William Jardine and Mr. Selby, that the Asiatic Golden Plover is a species distinct from our bird, but identical with that of the American continents, in which the bird, though smaller, has a longer beak and longer legs, with a greater extent of naked space above the joint, the yellow spots on the feathers of the lower part of the back more oval in shape than triangular, and the axillary plume is always ash brown, while that of our European bird is as invariably elongated and pure white.*

The adult bird in its summer plumage has the beak black; the irides very dark brown, almost black; on the forehead a band of white; top of the head, the nape of the neck, the back, wing-coverts, tertials, rump, and upper tail-coverts, greyish black, the edges of all the feathers varied with triangular-shaped spots of gamboge yellow; wing-primaries almost black; tail-feathers obliquely barred with shades of greyish white and brownish black; the lore, chin, sides of the neck, throat, breast, and all the under surface of the body as far as the vent, jet black, bounded on the sides with a band of white below the wing; axillary plume elongated, and pure white; under tail-coverts white.

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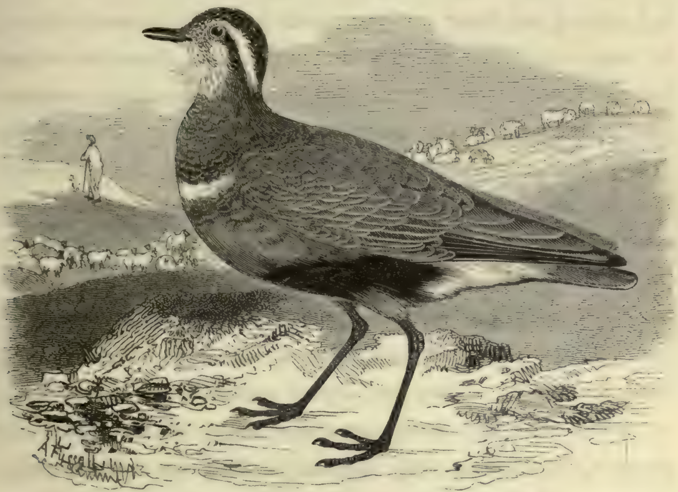
* M. Temminck, in the Fourth Part of his Manual, says, " Les sujets tués dans les régions intertropicales de l'Ancien-monde sont toujours revêtus du plumage d'hiver ; il ne nous est pas parvenu d'individus en livrée parfaite des noces. La race de ces climats est constamment plus petite dans toutes ces dimensions que celle de nos contrées."

In winter the chin is white; front of the neck and the breast, white, tinged with dusky, and spotted with dull yellow; the upper surface of the body nearly as in summer; before and after the breeding-season the adult birds may be seen for a time with the breast of a mixed plumage of black and white.

The whole length of an adult bird rather more than eleven inches. From the carpal joint to the end of the wing seven inches and three-quarters; the form of the wing pointed; the first quill-feather the longest of the whole.

The plumage of adult birds of both sexes is nearly alike at the same season of the year; but young birds of the year during their first autumn have the breast much darker in colour than the same part of the old birds in winter, and may be distinguished throughout their first winter from parent birds by the greater proportion of dusky grey on the breast and belly.

GRALLATORES. *CHARADRIIDÆ.*



THE DOTTEREL.

Charadrius morinellus.

Charadrius morinellus,	*Dottrel Plover,*	PENN. Brit. Zool. vol. ii. p. 102.
,, ,,	*The Dottrel,*	MONTAGU, Ornith. Dict.
,, ,,	*The Dotterel,*	BEWICK, Brit. Birds, vol. i. p. 378.
,, ,,	*The Dottrel,*	FLEM. Brit. An. p. 113.
,, ,,	*The Dotterel,*	SELBY, Brit. Ornith. vol. ii. p. 236.
,, ,,	*Dotterel Plover,*	JENYNS, Brit. Vert. p. 178.
,, ,,	*The Dottrel,*	GOULD, Birds of Europe, pt. ii.
,, ,,	*Pluvier guignard,*	TEMM. Man. d'Ornith. vol. ii. p. 537.

THE DOTTEREL is a summer visiter only to this country, making its appearance in the south-eastern counties of England towards the end of April, and does not seem to go in any numbers far to the westward. Mr. Thompson says it is a rare visitant to Ireland; it has not been seen more than once or twice in Cornwall, and only occasionally in

Devonshire and Dorsetshire. In Wiltshire, Berkshire, Hertfordshire, Cambridgeshire, Suffolk, and Norfolk, small flocks, or trips as they are called, of Dotterel are seen in the spring on their way to their breeding-ground, which, in many instances, is very far north, and those or others are again seen in the autumn on their return, their numbers then reinforced by the addition of the young birds of the year. On the chalk hills about Royston on the borders of Hertfordshire and Cambridgeshire, these birds have been observed for many years to make their first appearance in each season by the 20th of April; they are seen for about ten days, some probably moving on to the northward, and their places being supplied for a time by other arrivals from the south. They are found generally on the fallows, or newly ploughed lands near the edges of the downs, or sheep walks, where they appear to feed on worms, slugs, insects, and their larvæ. From these counties the birds pass on to more northern localities, and are seen in Lincolnshire, Derbyshire, Yorkshire, Lancashire, Westmoreland, Cumberland, Northumberland, and various parts of Scotland, always inhabiting high ground. They are generally seen in these northern districts in May. Dr. Beck of Copenhagen told me that the Dotterel pass the islands at the mouth of the Baltic about the 1st of June, and disperse over Scandinavia. Professor Nilsson mentions their annual visit to Sweden: Mr. Hewitson saw some on the ploughed fields of Norway; and my friend Mr. Dann gave me two eggs taken in that country. Linnæus says they are frequent in Dalecarlia and the Lapland Alps; and they are known to go as high as the sixty-seventh degree of north latitude. They are said to breed also in Russia, Siberia, and Northern Asia.

The best account of the habits of this species at its breeding ground has been supplied by T. C. Heysham, Esq. of Carlisle, from which the following is an extract :—

"I will now narrate," says this gentleman, "as succinctly as possible, what has fallen under my own observation relative to the habits and economy of this bird. In the neighbourhood of Carlisle, Dotterels seldom make their appearance before the middle of May, about which time they are occasionally seen in different localities, in flocks which vary in number from five to fifteen, and almost invariably resort to heaths, barren pastures, fallow grounds, &c. in open and exposed situations, where they continue, if unmolested, from ten days to a fortnight, and then retire to the mountains in the vicinity of the lakes to breed. The most favourite breeding-haunts of these birds are always near to or on the summits of the highest mountains, particularly those that are densely covered with the woolly fringe-moss, *Trichostomum lanuginosum*, Hedw. which indeed grows more or less profusely on nearly all the most elevated parts of this alpine district.* In these lonely places they constantly reside the whole of the breeding-season, a considerable part of the time enveloped in clouds, and almost daily drenched with rain or wetting mists, so extremely prevalent in these dreary regions: and there can be little doubt that it is owing to this peculiar feature in their economy, that they have remained so long in obscurity during the period of incubation. The Dottrel is by no means a solitary bird at this time, as a few pairs usually associate together, and live, to all appearance, in the greatest harmony. These birds do not make any nest, but deposit their eggs, which seldom exceed three in number, in a small cavity on dry ground covered with vegetation, and generally near a moderate sized stone, or fragment of rock. In early seasons old females will occasionally begin to lay their eggs about the 26th of May; but the greater part seldom commence before the first or second week in June. It would appear, however, from the following facts, that they vary exceedingly in this respect. On the 19th of July 1833, a perfect egg was taken out of a female, which had been recently killed on Robinson; and on the 26th of May 1834, I received four Dottrels from Keswick, which had been shot on Great Gavel the day before. In the ovary of one of them I found an egg almost quite ready for exclusion, being a difference of nearly eight weeks. So great a discrepancy in all probability is of very rare occurrence; yet it will subsequently appear that eggs recently laid, and a young bird, a few days old, were found on the same day, at no great distance from each other. The males assist the females in the incubation of their eggs. How long incubation continues I have not yet been able to ascertain; but I am inclined to think that it rarely lasts much longer than eighteen or twenty days. A week or two previous to their departure, they congregate in flocks, and continue together until they finally leave this country, which takes place sometimes during the latter part of August, at others not before the beginning of September. A few birds no doubt are occasionally seen after this period; but they are either late broods, or birds that are returning from more northern latitudes. This autumn I visited several breeding-stations on the 25th of August, and again on the 2nd of September, but in neither instance could I observe a single individual.

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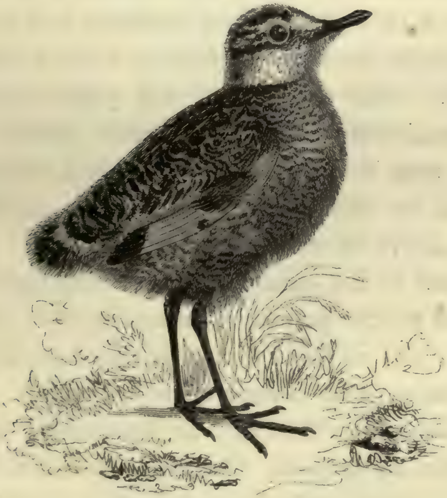
* "The favourite breeding-stations of the Dottrel are frequently called smittle places, by some of the guides and anglers at Keswick."

" Anxious as I have been for several years past to procure the eggs of the Dottrel for the purpose of adding undoubted specimens of so rare an egg to my cabinet, as well as to prove beyond all doubt that this bird breeds in Cumberland; yet it was not until the present year that I had the gratification of accomplishing an object which I have had so long in view. After repeated excursions through the lake district this summer for the express purpose, I was so fortunate as to obtain their eggs in two different localities,—namely, three on Whiteside, contiguous to Helvellyn, on the 29th of June, and two on the 5th of July on Robinson, in the vicinity of Buttermere. The former had been incubated twelve or fourteen days; the latter were only recently laid; and, in both instances, the birds were seen to leave their eggs: one, on quitting them, immediately spread out its wings and tail, which it trailed on the ground a short distance, and then went away without uttering a single note. On this day, 5th of July 1835, a young bird, a few days old, was also captured.



"Having spent a considerable portion of several days on Robinson, in company with a very able assistant, searching for the eggs of the Dottrel, I had, of course, ample opportunities of observing their manners; and I flatter myself that the following particulars will be interesting to some of my ornithological readers. On the 3rd of July we found three or four pair near the most elevated part of this mountain; and on all our visits thither, whether early in the morning or late in the afternoon, the greater part were always seen near the same place, sitting on the ground. When first discovered, they permitted us to approach within a short distance, without showing any symptoms of alarm; and frequently afterwards, when within a few paces, watching their movements, some would move slowly about and pick up an insect, others would remain motionless, now and then stretching out their wings, and a few would occasionally toy with each other, at the same time uttering a few low notes, which had some resemblance to those of the Common Linnet. In short, they appeared to be so very indifferent with regard to our presence, that at last my assistant could not avoid exclaiming, 'What stupid birds these are!' The female that had young, nevertheless, evinced considerable anxiety for their safety, whenever we came near the place where they were concealed, and as long as we remained in the vicinity, constantly flew to and fro above us, uttering her note of alarm.

"As soon as the young birds were fully feathered, two were killed for the purpose of examining their plumage in this state; and we found that after they had been fired at once or twice, they became more wary, and eventually we had some little difficulty in approaching sufficiently near to effect our purpose. The moult appears to commence somewhat early in old birds; a male that was killed on the

25th of July, was completely covered with pen feathers, and the belly, from incubation, almost entirely bare. The stomachs I dissected were all filled with the *elytra*, and remains of small coleopterous insects, which, in all probability, constitute their principal food during the breeding season.

" These birds, I understand, are getting every year more and more scarce in the neighbourhood of the lakes; and from the numbers that are annually killed by the anglers at Keswick and the vicinity,—their feathers having long been held in high estimation for dressing artificial flies,—it is extremely probable that in a few years they will become so exceedingly rare, that specimens will be procured with considerable difficulty. I have subjoined the names of some of the principal mountains in this county on which Dottrels have been known to breed, and I have also added, as far as practicable, their elevation above the level of the sea, under the idea that this information may prove of some utility to naturalists who may hereafter feel inclined to investigate the manners of this species in the same district. The relative positions of these mountains may be seen at a single glance, on referring to Greenwood's excellent Map of the County of Cumberland.

	Feet above the level of the sea.		Feet above the level of the sea.
Helvellyn .	3055	Carrock Fell .	2110
Whiteside		Grasmoor . .	2756
Whatson Dod		Robinson .	2292
Great Dod		Gold Scalp .	1114
Saddleback .	2787	Great Gavel .	2925
Skiddaw . .	3022		

Those mountains whose elevations are not given, exceed that of Carrock Fell."

The Dotterel is said to breed on the Mendip Hills in

Somersetshire, besides the various mountains of the lake counties, as stated by T. C. Heysham, Esq., and formerly also by his father, Dr. Heysham, in his Catalogue of Cumberland Animals. There is no doubt, also, that they breed on some of the mountains in Scotland. Braemar, in Aberdeenshire, has been named. Colonel Thornton, in his Sporting Tour, mentions having seen several pairs in Scotland in the middle of August; and Montagu saw them in pairs in that country sufficiently late in spring to warrant the conjecture that they bred there. An egg in my own collection was obtained on the Grampian Hills; this example is of a yellowish olive colour, blotched and spotted with dark brownish black: one inch seven lines and a half in length, by one inch two lines and a half in breadth.

Dotterel were more numerous than usual in the London market during the spring of the present year, 1845: I counted seventeen couple at the shop of a poulterer at one time. In July I heard of one nest of four eggs having been taken on Saddleback.

M. Temminck says the Dotterel is rare in Holland; that they are found, but only in small numbers, on the highest mountains of Bohemia and Silesia, at elevations from four thousand five hundred to four thousand eight hundred feet. In France, according to M. Vieillot, they are only seen on their passage in spring and autumn; and they are included in the Catalogues of the Birds of Provence, Genoa, and Italy. They are seen in the Grecian Archipelago and the Levant; and the Zoological Society have received a specimen sent by Messrs. Dickson and Ross from Trebizond. Some are said to pass the winter in the south of Italy, in Sicily and the Levant.

The Dotterel are well known as most excellent birds for the table; those that in spring and autumn are sent to the London market, find ready sale at seven or eight shillings a couple. They are reckoned very foolish birds, so that a dull fellow is proverbially called a Dotterel. Authors seem to have had this latter quality in their view when they called the bird *morinellus*, which is probably derived from the Greek *moros*, or the Latin *morio*, a fool, adding the diminutive, meaning a little fool. The gun has long since superseded the net, as a means of obtaining Dotterel; the bird was said to imitate the actions of the fowler: but its various qualities are referred to by several old writers; thus Drayton, in his Polyolbion says—

> "The Dotterel, which we think a very dainty dish,
> Whose taking makes such sport, as no man more can wish.
> For as you creep, or cower, or lie, or stoop, or go,
> So, marking you with care, the apish bird doth do;
> And acting everything, doth never mark the net,
> Till he be in the snare which men for him have set."

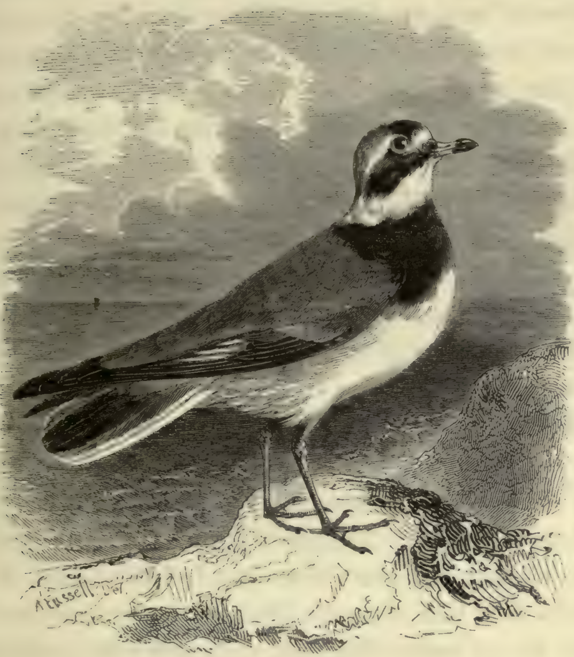
The adult bird, in its summer plumage, has the beak nearly black; the irides brown; the top of the head and nape of the neck very dark brown, bounded on the sides and behind by a band of pure white; the ear-coverts, the neck and back, ash colour; the scapulars, wing-coverts and tertials, ash brown edged with buff; wing-primaries ash grey, the first with a broad white shaft; tail-feathers greyish brown; those in the middle tipped with dull white, the three outside feathers with broad ends of pure white; the chin and sides of the neck white; the front and sides of the neck below ash grey; from shoulder to shoulder, across the breast, is a band of white, margined above and below with a dark line; breast rich fawn colour, passing to chestnut; belly black; vent and under tail-coverts white, tinged with buff; under wing-coverts and axillary plume greyish white; legs and toes greenish yellow; the claws black.

The whole length nine inches and a half. From the carpal joint to the end of the wing, six inches; the wing in form pointed; the first quill-feather the longest; the average weight about four ounces: I have seen one example that weighed six ounces and a half.

I have occasionally seen specimens early in May that had not obtained their summer dress; the breast is then white, but slightly tinged with buff.

Mr. Heysham's description of a young female, three weeks or a month old, killed on Robinson July 25th 1835, is as follows:—"Forehead, throat, and sides of the face, cream-yellow, covered with small spots and fine streaks of greyish brown. Crown of the head, occiput, and also the feathers on the back, dark brown, all more or less broadly edged with buff orange. Scapulars and wing-coverts olive green, deeply edged with reddish white; tail the same, finely margined with white, the centre feathers broadly tipped with reddish white, and the three lateral ones on each side ending in a large irregular whitish spot. Sides of the neck, flanks, and a broad band above each eye, buff orange, the former finely streaked with greyish brown. Breast cinereous, slightly tinged with reddish white, and marked on each side with large spots of olive green. Belly white, finely spotted here and there with greyish brown. Bill black. Irides dark brown. Legs pale olive green; soles bright yellow."

GRALLATORES. *CHARADRIIDÆ.*


A Russell Del.

THE RINGED PLOVER.

Charadrius hiaticula.

Charadrius hiaticula,	*Ringed Plover,*	Penn. Brit. Zool. vol. ii. p. 105.
,, ,,	,, ,,	Montagu, Ornith. Dict.
,, ,,	,, *Dotterel,*	Bewick, Brit. Birds, vol. i. p. 380.
,, ,,	,, *Plover,*	Flem. Brit. An. p. 113.
,, ,,	,, ,,	Selby, Brit. Ornith. vol. ii. p. 240.
,, ,,	,, ,,	Jenyns, Brit. Vert. p. 179.
,, ,,	*Ring Dottrel,*	Gould, Birds of Europe, pt. vi.
,, ,,	*Grand Pluvier à collier,*	Temm. Man. d'Ornith. vol. ii. p. 529.

This prettily marked Plover is found throughout the year on most of the shores of the British Islands, but more particularly frequents bays and flats along the coast where the sea at its ebb retires to a distance, leaving extensive surfaces of sand or shingle. These birds also frequent the sides of large rivers, and are not unfrequently found about the margin of inland lakes and large ponds. As a species it is numerous, and its habits are lively and interesting. It is recorded that Mr. Scales found them breeding on the warrens at Beechamwell and Elston, near Thetford in Norfolk; and the late Mr. Hoy sent me word, also, that many breed on the sandy warrens of Norfolk and Suffolk, at a considerable distance from the sea. They pair in May; but making no nest, deposit their four eggs in any accidental depression on a bank of sand, broken shells or shingles above high-water mark. The eggs are one inch five lines long, by one inch and half a line in breadth, of a pale buff or cream-colour, spotted and streaked with ash blue and black. The parent birds are greatly attached to their young, and practise various devices to draw off any intruder from their charge, while from the great similarity in colour to the surrounding materials, either the eggs or the young are very difficult to find. They feed on worms, insects, and, when at the edge of the sea, on the various species of the thinner-skinned crustacea, as shrimps, sand-hoppers, &c., with which almost every little salt-water pool abounds. The note of this bird is a shrill whistle.

The Ringed Plover is even more numerous on our shores in winter than it is in summer, probably from the number that come to this country from high northern latitudes, which they visit during the breeding-season. Thus M. Nilsson says they are only seen in Sweden, and on the shores of the Baltic from March to October. Mr. Hewitson saw them in Norway in summer. Linnæus found them in several parts of Lapland during his tour, and as far north and west as the Lapland Alps. They are included among the Birds of Iceland; Mr. Scoresby, in his Journal, mentions having seen them on the east coast of Greenland, and our Arctic voyagers observed them on the west coast of Greenland, at Prince Regent's Inlet, and at Hecla Cove.

Pennant says it is found in summer in Russia and Siberia. In Germany it lives on the banks of rivers; it is abundant in Holland on the sea-shore; and is found in France, Provence, Italy, and Sicily. I have seen specimens from Malta; and Mr. Fellowes obtained examples in Asia Minor. M. Temminck includes this species among the Birds of Japan.

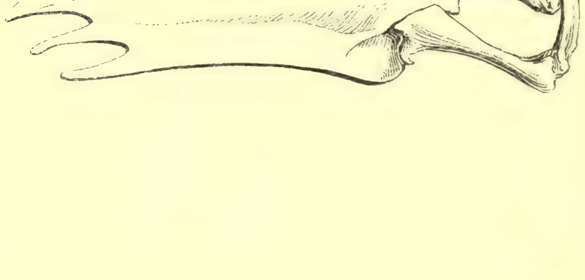
The male in summer has the beak black at the point, orange-yellow at the base; the irides brown; forehead white, with a black band above it reaching to the eyes on each side; lore, space under the eyes, and the ear-coverts, black; top of the head and nape of the neck hair brown; below this, and all round the neck a collar of white; below this a collar of black; the back, wing-coverts, and tertials, hair-brown; the wing-coverts tipped with white, forming a continuous bar of that colour, which is conspicuous when the bird is on the wing; the primaries almost black, the distal portion of each quill-shaft white; upper tail-coverts and the base of the tail-feathers hair-brown, passing into greyish black towards the end; the middle pair the longest, the next four on each side tipped with white; the outer feather on each side entirely white; chin and throat white; across the neck a broad collar of black; breast, belly, vent, and under tail-coverts, white; under wing-coverts and the axillary plume white; legs and toes orange; the claws black.

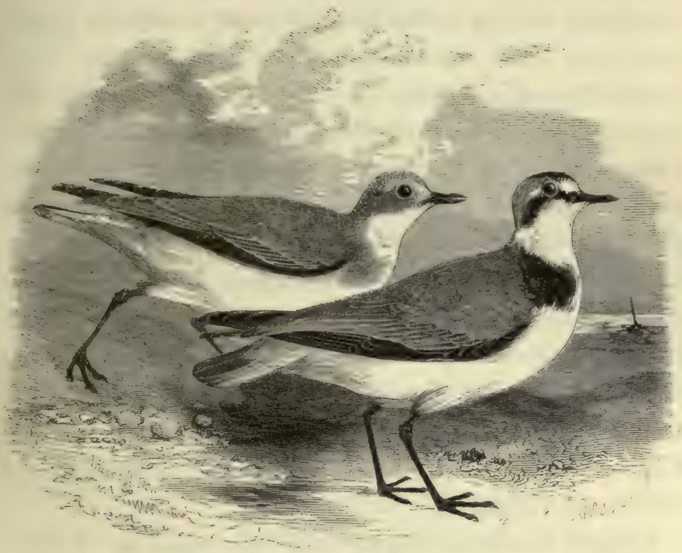
The whole length of the adult bird seven inches and three-quarters. From the carpal joint to the end of the wing, five inches and a half: the wings pointed in shape; the first quill-feather the longest.

Adult females in summer have the black bands and collar narrower than in the males, and the colours not quite so decided; both sexes in winter have the black and the white less pure in colour.

Young birds of the year have the beak almost entirely black; they have no black band over the white one on the forehead; the lore, ear-coverts, and the collar round the lower part of the neck are only dusky brown; legs and toes pale yellow.

The vignette below represents the breast-bone of the Golden Plover, showing by the depth of the keel, and the consequent large size of the pectoral muscles, the powers of flight in the family of the Plovers.





THE KENTISH PLOVER.

Charadrius Cantianus.

Charadrius Cantianus,	*Kentish Plover,*	Bewick, Brit. Birds, vol. i. p. 382.
" "	" "	Flem. Brit. An. p. 114.
" "	" "	Selby, Brit. Ornith. vol. ii. p. 243.
" "	" "	Jenyns, Brit. Vert. p. 180.
" "	" "	Eyton, Rarer Brit. Birds, p. 100.
" "	" "	Gould, Birds of Europe, pt. v.
" "	*Pluvier à collier interrompu,*	Temm. Man. d'Ornith. vol. ii. p. 544.

This little Plover was first described and named by Dr. Latham, in the second supplementary volume to his General Synopsis of Birds, page 316, from specimens sent him by Dr. Boys, which were killed at Sandwich in Kent in the year 1787 and 1791, and this species has several times since been obtained from the same locality. Mr. George

Clayton, of Rochester, in May 1830, found this species in pairs at Pegwell Bay, and on the Sandwich Plats; it is also found on the shelly bank towards Sandhurst Castle and Deal, from whence I have seen specimens. The Ringed Plover is common in the same localities; but the Kentish Plovers may be distinguished from the Ringed Plovers, when on the ground, by their smaller size; but though they mix together when feeding, Mr. Clayton says the two species do not fly together.

Mr. Francis Plomley, who resides at Lydd in Romney Marsh, a favourite locality for birds, has been kind enough to supply me with a catalogue and notes of more than one hundred birds found in that vicinity. The Kentish Plover, this gentleman observes, is numerous in that locality; it arrives in April, breeds on the shingle, and departs in August.

Colonel Montagu, judging from his collection of birds, still preserved with care in the British Museum, appears never to have obtained an adult male in summer of this species, or he could have had no doubt that the bird was perfectly distinct from the Ringed Plover, last described; indeed his collection appears to have included but one young bird. The Kentish Plover has since been killed in various places on the coast of Sussex from Rye along the flat shingle-covered shore towards Hastings, where I have reason to believe it breeds every year; Mr. Gould mentions that specimens have been killed at Selsey, a few miles farther westward in the same county; and at Great Yarmouth, in Norfolk, it appears to have been obtained both by Mr. Eyton and Mr. Gould, farther north than which it has not been observed in this country, that I am aware of.

M. Temminck says the Kentish Plover is abundant in the northern parts of Germany, and on the shores of Holland. Mr. William Borrer, jun., of Henfield, in a series of Ornithological notes, with which he has very kindly supplied me, mentions having seen three of these birds at St. Owen's Bay in the Island of Jersey, one of which he obtained. M. Vieillot says it is found in France on the shores of Picardy; it is found also in Provence, in Italy, and along the shores of the Mediterranean generally. Mr. Selby says it inhabits Egypt, Nubia, and Tartary, and M. Menetries, the Russian Naturalist, includes it among the birds found at the base of the Caucasian range. Mr. Blyth has obtained it in the vicinity of Calcutta. M. Temminck says it is found in the Indian Archipelago, but that he had not received it from Japan. Dr. Horsfield includes it in his Catalogue of the Birds of Java.

The habits and food of this little Plover resemble those of the species last described. The female makes no nest, but lays her four eggs in a small hollow in the sand, or amongst fine shingle and broken shells. The egg is correctly figured by Mr. Hewitson in his well-known work on the eggs of British Birds. I possess two eggs of this species, given me by Dr. Pitman, obtained with others of the same bird from the Sussex coast: these are one inch three lines in length, by eleven lines in breadth, of a yellowish stone colour, spotted and streaked with black.

When at Hastings in 1833, I learned from collectors that dogs were trained to hunt for nests and eggs over the extensive tracts of breeding-ground on the shores of Kent and Sussex. On finding a nest of eggs, which they did by scent, the parent birds in some instances being upon the nest, the dog stopped till the master came up to examine the ground, and this done, the dog went off again, upon signal, pointer-like, to hunt as before.

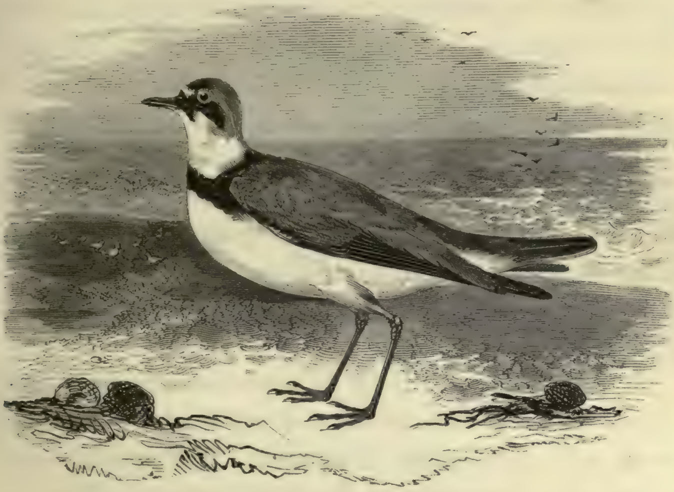
The adult male in summer has the beak wholly black; the irides brown; the forehead white, the same colour being continued over the eye and a little beyond it over the ear-coverts; above the white on the forehead is a patch of black, which extends only to the edge of the white, not to the eye-lid: top of the head and the occiput rich reddish brown; from the base of the beak to the eye a black streak; ear-coverts also black; nape of the neck white; back, scapulars, wing-coverts, tertials, upper tail-coverts, and the base of the tail-feathers ash-brown or light hair-brown; the wing-primaries dusky black; the distal part of the shafts of the quill-feathers white; the two middle tail-feathers the longest, and dusky black at the end; the two outer tail-feathers on each side wholly white; chin, cheeks, sides of the neck and the throat, pure white; just in advance of the carpal joint, or point of the wing, on each side, is a patch of black, not continued round the front; the breast, belly, vent, and under tail-coverts white; under wing-coverts and axillary plume white; legs, toes, and claws, like the beak, black at all ages.

Whole length almost seven inches. From the carpal joint to the end of the wing, four inches and one quarter: the wing pointed; the first quill-feather the longest.

In the adult female the dark colour on the head and neck is less decidedly black, and occupies a rather smaller surface.

Young birds of the year have no black colour above the white on the forehead; and the lore, as well as the ear-coverts and the patch in front of the bend of the wing, are dusky brown; the beak, legs, and toes, black.

The illustration at the head of this subject represents an adult male killed in summer, and a young bird of the year killed in autumn.



THE LITTLE RINGED PLOVER.

Charadrius minor.

Charadrius minor,	*Little Ringed Plover,*	JENYNS, Brit. Vert. p. 179.
„	„	*Little Ring Dottrel,*	GOULD, Birds of Europe, pt. xi.
„	„	*Petit Pluvier à collier,*	TEMM. Man. d'Ornith vol. ii. p. 542.

OF this rare British Bird, Mr. Gould says, "We are indebted to our friend Mr. Henry Doubleday of Epping, for the loan of an example of this elegant little Plover, which he informs us was taken at Shoreham in Sussex. From the extreme youth of the specimen transmitted to us, it is clear that it must have been bred on the spot; and it is worthy of notice that the person who killed it affirms that he has long suspected the present bird to be a resident on that part of the coast, from having remarked that he could always perceive a difference in the note of this bird from that of either of the other species. Whether this Plover habitually resorts to our shores or not, it may now reasonably claim a place in the Fauna of our Island, and we are glad of the opportunity of introducing it to the notice of British Ornithologists, and still more so that the only British-killed specimen should have fallen into the hands of an individual so zealous in the collection of our native birds as the gentleman above mentioned."

The Rev. Richard Lubbock, in his recently published Fauna of Norfolk, says, that " two specimens of this bird in the Norwich Museum, were believed by Mr. Denny, the curator, to have been killed in the county; but the fact was not noted down at the time."

On the Continent it is by no means a scarce bird. M. Nilsson says that both this species and the Kentish Plover occasionally visit Sweden in summer. M. Temminck says it is found in Germany, and the central portions of Europe; it inhabits Provence, Italy, and some of the islands of the Mediterranean; the Zoological Society have received specimens sent by Messrs. Dickson and Ross from Erzeroom, where it appears to be numerous about the middle of June on the sandy and pebbly banks of the Aras at Hassen Kaleh, eighteen miles east of Erzeroom. B. Hodgson, Esq., includes it in the birds of Nepal, Mr. Blyth has obtained it at Calcutta; and M. Temminck includes it among the Birds of Japan.

This species bears considerable resemblance to the Ringed Plover, *Ch. hiaticula*, and is likely to be occasionally overlooked; it is, however, to be distinguished readily, on examination, by its smaller size; its much more slender form, being one fourth lighter in weight; its black beak, its more slender and lighter-coloured legs, by the broad white shaft of the first quill-feather only of each wing; and by the dusky spot which is present at all ages on the inner web of the outer tail-feather on each side, which feather in the Ringed Plover is wholly white, without any spot, and there are two white feathers on each outside of the tail in the Kentish Plover.

M. Temminck says that the Little Ringed Plover exhibits some difference in its habits also, preferring the sides of rivers rather than the shores of the sea. On this point also Mr. Hoy, who has attended to the distinguishing peculiarities of this species on the Continent, remarks, "The Little Plover appears to be very rarely found on the sea coast; but frequents in preference the banks of rivers, where it breeds. It lays its eggs on the sand, not a particle of grass, or other material being used. It is very partial to sand banks, forming islands, which are often met with in some of the larger rivers of the Continent. It may also frequently be found during the breeding-season upon those large extents of sand, which are met with at some little distance from the borders of rivers, overgrown in part with a coarse wiry grass."

The egg of this bird is figured by Mr. Hewitson, from whose excellent work the previous extract was made. The egg measures one inch and one-eighth in length, by seven eighths of an inch in breadth; it is of a pale yellowish stone colour, with numerous small spots of three colours, bluish ash, red brown, and dark brown. I have also seen an egg of this bird in the collection of Lady Rachel Russell, of which I was permitted to have a drawing. This example exactly agrees with the egg figured by Mr. Hewitson in size, colours, and markings; the spots being only less numerous, but rather larger.

The food is similar to that of the other two species,—namely, aquatic insects in their various stages, and small worms.

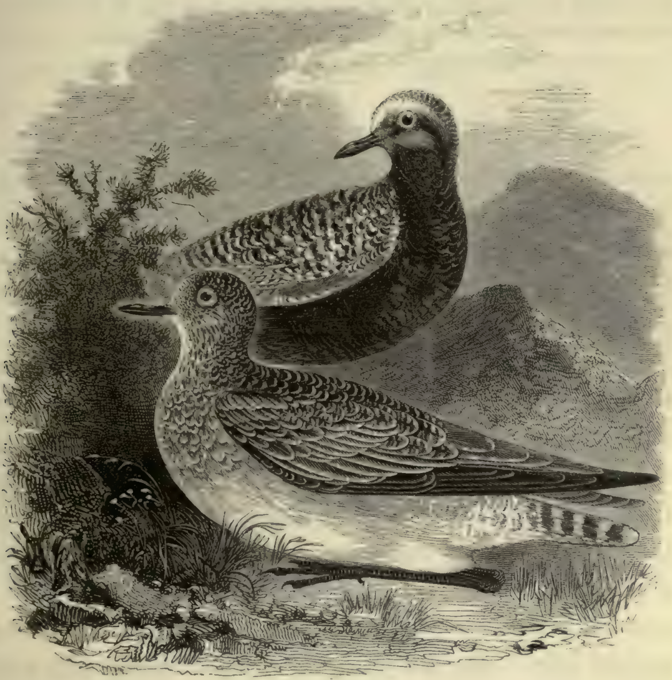
In the adult bird, the beak is black; the irides brown; the forehead white, with a black patch above it extending to the eye on each side; top of the head and the occiput ash brown; lore and ear-coverts black; nape of the neck white; back, scapulars, wing-coverts, tertials, rump, and upper tail-coverts, ash brown; primary and secondary wing-feathers dusky brown; these and the greater wing-coverts edged with white; the first primary quill-feather only with a broad white shaft; tail-feathers ash brown at the base, darker towards the end; the five outer tail-feathers on each side white at the end, this colour increasing in extent on each lateral feather, the outer one on each side having only a dusky spot on the inner web, but this appears to be constant at all ages; chin and throat white, this colour extending from the latter round the nape of the neck; below this and above the breast is a collar of black; the breast itself, the belly, vent, and under tail-coverts, pure white; legs and toes flesh colour tinged with yellow; the claws black.

Adult specimens generally measure six inches and one quarter. From the carpal joint to the end of the wing, four inches and three-eighths; the first quill-feather but very little longer than the second, and the longest in the wing.

The representation of the adult bird in Mr. Gould's plate wants the pale brown colour of the back extended over the feathers of the rump and the upper tail-coverts.

Adult females have the white and black frontal bands narrower than the males, according to M. Temminck, and they are also less perfectly defined.

Young birds of the year want all the decided black markings which distinguish old birds, and the ash-brown feathers of the back and wing-coverts have buff-coloured margins.



THE GREY PLOVER.

Squatorala cinerea.

Tringa squatarola,	*Grey Sandpiper,*	Penn. Brit. Zool. vol. ii. p. 69.
,, ,,	,, ,,	Montagu, Ornith. Dict.
,, ,,	,, *Plover,*	Bewick, Brit. Birds, vol. ii. p. 87.
Squatarola cinerea,	,, ,,	Flem. Brit. An. p. 111.
,, ,,	,, ,,	Selby, Brit. Ornith. vol ii. p. 227.
Vanellus griseus,	,, ,,	Jenyns, Brit. Vert. p. 181.
Squatarola cinerea,	,, ,,	Gould, Birds of Europe, pt. viii.
Vanellus melanogaster,	*Vanneau Pluvier,*	Temm. Man. d'Ornith. vol. ii. p. 547.

Squatarola. *Generic Characters.*—Bill rather strong, cylindrical, straight, nearly as long as the head; the tip, or horny part, about half the length of the whole bill, tumid, and arched, with the tomia bending inwards. Nasal groove wide, half the length of the bill; mesorhinium depressed below the level of the tip; nostrils longitudinally pierced in the membrane of the groove, linear, oblong. Wings rather long, acuminate, with the first quill-feather the longest. Legs slender, of mean length, naked above the tarsal joint. Feet four-toed, three before and one behind; front toes joined at their base by a membrane, that portion of it between the outer and middle toe being the longest; hind toe very small, or rudimental; tarsi reticulated. Plumage thick, close, and adpressed.—*Selby*.

In its habits, its general appearance, and in its double moult, or periodical change to black on the under surface of the body during the breeding-season, the Grey Plover very closely resembles the Golden Plover, but the presence of a hind toe, though small, prevents its being included in the genus *Charadrius*.

The Grey Plover is by no means so plentiful a species as the Golden Plover, and may be considered a winter visiter rather than a native resident, being much more common at the end of autumn, through the winter, and in the spring, than in summer, retiring to high northern latitudes during the breeding-season, and reappearing in small flocks when that season is over. I have sometimes obtained a specimen in the London market in the full black plumage at the end of May. Mr. Selby says, "I have occasionally met with one or two of these birds on the Fern Islands in June, but could never detect any of their young. These individuals, probably from some accidental cause, had been unequal to the usual migration." Dr. Fleming says he has reason to believe that it breeds in the high grounds of Kincardineshire. Mr. Thompson tells me it is a regular autumnal visitant in Ireland, and it is more common in the winter half year all round our shores than inland. Its food is similar to that selected by the Golden Plover, and it is an excellent bird for the table.

M. Nilsson, the Swedish naturalist, considers that this bird goes very far north to breed, returning through Sweden in August. It is known to visit Norway, the Faroe

Islands, Iceland, and Greenland. In the Natural History Appendix to Captain Parry's Second Voyage, written by Dr. Richardson, it is stated that this bird was found breeding on Melville Peninsula in June. Captain James Ross, in the Appendix to the Narrative of the Second Voyage of Sir John Ross, says this bird "was found by us breeding near the margins of the marshes immediately to the south-west of Fury Point, in considerable numbers. Some specimens were also obtained near Felix Harbour." In the Fauna Boreali-Americana, Dr. Richardson says, "This bird is observed in the Fur-countries in similar places to those frequented by the Golden Plover, though it is not equally common. It breeds in open grounds from Pennsylvania to the northern extremity of the continent. Its eggs are oil-green, spotted irregularly with different shades of umber brown: the spots crowded and confluent round the obtuse end."

Nearer home this bird is found in Russia and Siberia; but less abundant in Germany than in Holland or France. It is found in Spain, at Genoa, and in Italy, on its passage visiting Sicily, when coming from, or going to, Africa. Dr. Andrew Smith brought specimens from Algoa Bay, where he saw it all the breeding-season, but says that it does not attain any black colour on the breast. Mr. Selby mentions that it is found in Egypt. Mr. Blyth has obtained it at Calcutta. M. Temminck remarks that he has received this species from Japan in summer and winter plumage; but that specimens from the Island of Sunda and New Guinea, though killed at different seasons, had no indications of summer plumage. Dr. Horsfield includes this species in his Catalogue of the Birds of Java.

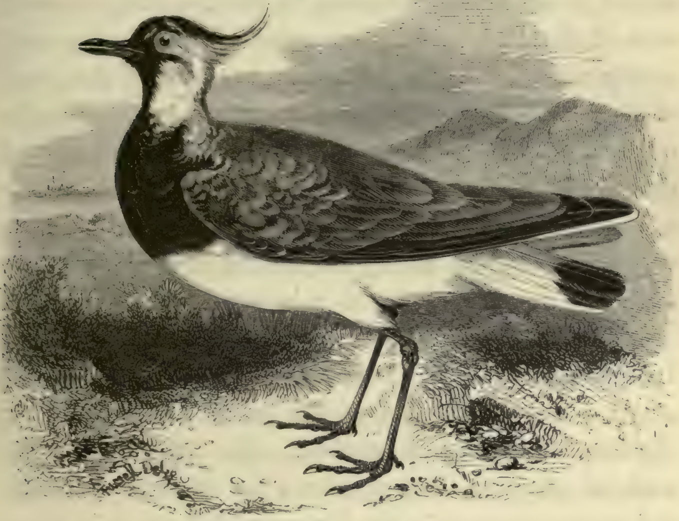
The adult bird in summer plumage has the beak black; the irides very dark brown; the forehead and top of the head white, the latter slightly speckled with greyish black; nape of the neck a mixture of dusky grey and white; the whole of the back, scapulars, wing-coverts, tertials, rump, and upper tail-coverts, black and white, the base of each feather being black, the ends white; the wing-primaries greyish black, the shafts white; tail-feathers white, with numerous greyish black transverse bars; the chin, cheeks, throat, sides of the neck, breast, and belly, black; vent and under tail-covers white; axillary plume elongated and black at all ages and seasons; under wing-coverts white; legs, toes, and claws, black. In this state, as to colour of plumage, it is the *Helvetica* and *melanogaster* of authors.

The whole length very nearly twelve inches. From the carpal joint to the end of the wing, seven inches and five-eighths; the first quill-feather three-eighths of an inch longer than the second, and the longest in the wing.

In winter the feathers on the upper surface of the body are dusky grey, edged with dull white; the throat, breast, and sides, lighter in colour than the back, the feathers but slightly streaked with dusky grey; the belly, vent, and under tail-coverts, dull white, with few or no marks.

In spring the black feathers begin to appear on the breast, and the birds may be observed in various degrees of change from white, with only a few black feathers, to entire and perfect black. The breeding-plumage is generally complete by the end of May.

Young birds of the year in autumn are darker than old birds in winter, having a larger proportion of black above and grey below.



THE PEEWIT, OR LAPWING.

Vanellus cristatus.

Tringa vanellus,	*Lapwing Sandpiper,*	Penn. Brit. Zool. vol. ii. p. 66.
„ „	„ „	Montagu, Ornith. Dict.
„ „	„ „	Bewick, Brit. Birds, vol. ii. p. 83.
Vanellus cristatus,	*Common Lapwing,*	Flem. Brit. An. p. 11.
„ „	*Crested or Green Lapwing,*	Selby, Brit. Ornith. vol. ii. p. 221.
„ „	„ *Lapwing,*	Jenyns, Brit. Vert. p. 182.
„ „	„ „	Gould, Birds of Europe, pt. xii.
„ „	*Vanneau huppé,*	Temm. Man. d'Ornith. vol. ii. p. 550.

Vanellus. *Generic Characters.*—Bill shorter than the head, straight, slightly compressed; the points of both mandibles horny and hard. Nasal groove wide, and reaching as far as the horny tip. Nostrils basal, linear, pierced in the membrane of the nasal groove. Legs slender, with the lower part of the tibiæ naked. Feet four toed; three before, one behind, united at the base by a membrane; hind toe very short, articulated upon the tarsus. Tarsi reticulated. Wings large, tuberculated or spurred in front of the carpal joint; the first three quill-feathers shorter than the fourth and fifth, which are the longest in the wing.

The Lapwing or Peewit is one of the best known among our native birds; the first name suggested by its peculiar mode of flight,—a slow flapping of its long wings; the second name having reference to the frequently-repeated note of the bird, which the sound of the word *peeweet* closely resembles. The French, in imitation of the sound of its note, call this bird *dixhuit.* This species, like the rest of the Plovers, inhabits marshy ground near lakes and rivers, wild heaths and commons, or the hills of an open unenclosed country. In such localities this bird is often very numerous, and during the months of April and May their eggs are sought after as a luxury for the table in all the districts where the birds are common. The marshes of Lincolnshire, Norfolk, Cambridgeshire, Essex, and Kent, afford a large proportion of the quantity with which the the London market is supplied. Mr. Selby says, "The trade of collecting them continues for about two months; and great expertness in the discovery of the nests is shown by those accustomed to it; generally judging of their situation by the conduct of the female birds, who invariably, upon being disturbed, run from the eggs, and then fly near to the ground for a short distance, without uttering any alarm cry. The males, on the contrary, are very clamorous, and fly round the intruder, endeavouring, by various instinctive arts, to divert his attention." On this subject, also, Mr. Salmon observes, "So expert have some men become, that they will not only walk straight towards a nest, which may be at a considerable distance, but tell the probable number of eggs it may contain, previous to inspection; generally judging of the situation and number of eggs by the conduct of the female bird." In some counties, however, all the most likely ground is carefully searched for eggs, once every day, by women and children, without any reference to the actions of the birds. Mr. Plomley sends me word that two hundred dozens of Plovers' eggs were sent from Romney Marsh to Dover in the season of 1839; and that dogs are trained for the purpose of finding the eggs. A slight depression in the ground, and a few dried bents serve for a nest, in which, if not interfered with, four eggs are generally deposited; these are about one inch eleven lines long, by one inch four lines in breadth, of an olive-coloured ground, blotched and spotted nearly all over with blackish brown. The young, when hatched, are covered with a yellowish fawn-coloured down, mixed and spotted with brownish black, and like the chicks of the Dotterel and Ring Plover, with a light-coloured collar round the neck. They soon follow the parent birds, who lead them to the softer parts of the soil, where food is more abundantly obtained. They feed on earth-worms, slugs, and insects in their various stages. From their services in this way, Peewits are frequently kept in gardens, and become very interesting pets. Dr. Latham says, "I have seen this bird approach a worm-cast, turn it aside, and after walking two or three times about it, by way of giving motion to the ground, the worm come out, and the watchful bird, seizing hold of it, draw it forth. The habit of the Peewit of flying and screaming over the head of any one who happens to go near their eggs or young, was productive formerly of two very opposite feelings towards them. Charles Anderson, Esq., of Lea, near Gainsborough, to whom I am indebted for many notes on the Birds of Lincolnshire, sends me word that a very ancient Lincolnshire family, the Tyrwhitts, bear three Peewits for their arms; and it is said, from a tradition, that it was in consequence of the founder of their family having fallen in a skirmish, wounded, and being saved by his followers, who were directed to the spot where he lay by the cries of these birds, and their hovering over him. The notice, however, so frequently given by these birds was sometimes productive of very different consequences. Mr. Chatto, in his agreeable " Rambles in Northumberland and the Scottish Border," refers to " the persecution to which the Covenanters were exposed in the reign of Charles the Second and his bigoted successor ;" and quoting Dr. Leyden, alludes to the tradition that " they were frequently discovered to their pursuers by the flight and screaming of the Lapwing ; in consequence of which the Lapwing is still regarded as an unlucky bird in the south of Scotland."

In the autumn they collect in flocks, and from that time till the end of winter are excellent birds for the table.

The Peewit is common and indigenous to Ireland, and is abundant in suitable localities throughout the British Islands to the most remote of the Shetlands. It is found in Denmark ; M. Nilsson says it is plentiful in Sweden and in Scandinavia generally ; it goes to the Faroe Islands, and even to Iceland. Pennant, in his Arctic Zoology, says it is frequent in Russia, and southward over the European continent it is found as far as Spain, Provence, and Italy. It inhabits Egypt : Mr. Strickland found it at Smyrna ; the Zoological Society have received specimens from Erzeroom ; and the Russian naturalists found it on the plains between the Black and the Caspian Seas. It may be traced from thence to Astrachan, and to the vicinity of Lake Baikal. Mr. Blyth has obtained it at Calcutta ; Mr. Selby mentions having seen examples from China which did not differ from our English specimens ; and M. Temminck includes it among his Birds of Japan.

The beak is black ; the irides hazel ; forehead, crown, and occiput, black, forming a cap or hood, which ends behind in a tuft of six or seven elongated, slender feathers, slightly curved upwards, which the bird can elevate or depress at pleasure; behind the eye, on the cheeks and sides of the neck, and reaching to the nape beneath the plume, white, speckled with black; an oblique streak of black below the eye; back, scapulars, wing-coverts, and tertials, green, glossed with purple and copper-colour; the primaries black, the first three or four in each wing greyish white at the end; upper tail-coverts reddish chestnut; the basal half of the tail-feathers white, the rest black, the proportion of white greater in the two or three outer feathers, the extreme outside feather almost entirely white; chin, throat, and upper part of the breast shining black; lower part of the breast, belly, and vent, white; under tail-coverts fawn colour; legs and toes dull orange brown; claws black.

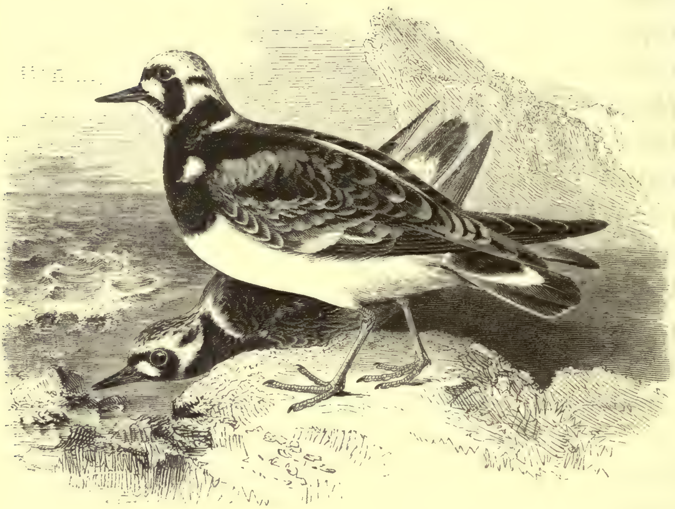
In winter the chin and throat are white; the change to the black of the breeding-season is obtained in April. The sexes in plumage resemble each other, but the female has the shorter occipital plume.

The whole length a little more than twelve inches. From the carpal joint to the end of the wing nine inches: the first quill-feather shorter than the fourth, but a little longer than the fifth; the second and third feathers equal in length, and the longest in the wing.

In young birds of the year, the plumage of the body above is edged with buff.

White, cream-coloured, and mouse-coloured varieties of the Peewit have occasionally been obtained.

GRALLATORES. *CHARADRIIDÆ.*



THE TURNSTONE.

Strepsilas interpres.

Tringa interpres,	*The Turnstone,*	**Penn.** Brit. Zool. vol. ii. p. 83.
,, ,,	*Hebridal Sandpiper,*	,, ,, ,, p. 84.
,, ,,	*The Turnstone,*	**Montagu**, Ornith. Dict.
,, ,,	,, ,,	**Bewick**, Brit. Birds, vol. ii. p. 116.
,, *morinella,*	,, ,,	,, ,, ,, p. 118.
Strepsilas interpres,	*Common Turnstone,*	**Flem.** Brit. An. p. 110.
,, ,,	,, ,,	**Selby**, Brit. Ornith. vol. ii. p. 204.
,, ,,	,, ,,	**Jenyns**, Brit. Vert. p. 182.
,, *collaris,*	*The* ,,	**Gould**, Birds of Europe, pt. vi.
,, ,,	*Tourne pierre à collier,*	**Temm.** Man. d'Ornith. vol. ii. p. 553.

Strepsilas. *Generic Characters.*—Beak as short as the head, strong, thick at the base, tapering gradually to the point, forming an elongated cone; upper mandible the longest, rather blunt at the end. Nostrils basal, lateral, linear, pervious, partly covered by a membrane. Wings long, pointed, the first quill-feather the longest. Feet four-toed, three in front, one behind; the anterior toes united by a membrane at the base, and furnished with narrow rudimentary interdigital membranes; hind toe articulated up the tarsus, and only touching the ground at the tip.

The name of Turnstone has long been applied to this species from the method adopted by these birds of searching for food by turning over small stones with their strong beaks to get at the marine insects that lurk under them. The habit is not more singular than the species, which is the only one of the genus hitherto discovered by naturalists, and is remarkable for the beauty and variety of its plumage. It inhabits the sea shore and the margins of lakes and large rivers, occasionally associating with some of the smaller Plovers or the Sanderling, next to be described, which it more resembles in its manners than the Sandpipers. It feeds on the smaller crustacea, and the soft-bodied animals inhabiting thin shells, turning over stones, and searching among sea-weed for its food; but is observed to dwell longer in one place, if not disturbed, than the Plovers, and is said to utter a loud twittering note when on the wing.

It frequents our coast either singly or in small flocks of four or five in number, from August throughout the winter till May, when it leaves us to go northward to breed, and returns in August with its young, which at that time have none of the fine, rich, red, black, or white colours, so conspicuous in the adult birds. Dr. Fleming says it is stationary in Zetland, and from having seen it there at all seasons, concluded it bred there. When on the coast of Norway, Mr. Hewitson says, "We had visited numerous islands with little encouragement, and were about to land upon a flat rock, bare except where here and there grew tufts of grass, or stunted juniper clinging to its surface, when our attention was attracted by the singular cry of a Turnstone, which, in its eager watch had seen our approach, and perched itself upon an eminence of the rock, assuring us, by its querulous, oft-repeated note, and anxious motions, that its nest was there. We remained in the boat a short time, until we had watched it behind a tuft of grass, near which, after a minute search, we succeeded in finding the nest in a situation in which I should never have expected to meet with a bird of this sort breeding; it was placed against a ledge of the rock, and consisted of nothing more than the dropping leaves of the juniper bush, under a creeping branch of which the eggs, four in number, were snugly concealed, and admirably sheltered from the many storms by which these bleak and exposed rocks are visited, allowing just sufficient room for the bird to cover them. We afterwards found several more nests with little difficulty. All the nests contained four eggs each. The time of breeding is about the middle of June. The eggs measure one inch seven lines in length, by one inch two lines in breadth, of an olive green colour, spotted and streaked with ash blue and two shades of reddish brown."

The Turnstone inhabits the shores and islands of the Baltic, and was also one of the birds found by M. Von Baer at Nova Zembla. During the various northern expeditions from this country, these birds were seen at Greenland, on Winter Island, at Felix Harbour, and along the coast between Victoria Harbour and Fury Point, about the middle and towards the end of June. I have seen specimens of old and young birds from Iceland; and Dr. Richardson says, "This species reaches its breeding-quarters on the shores of Hudson's Bay, and of the Arctic Sea, up to the seventy-fifth parallel, in June, and quits them again in the beginning of September. It halts in October on the shores of the Delaware, but proceeds farther south when the cold weather sets in."

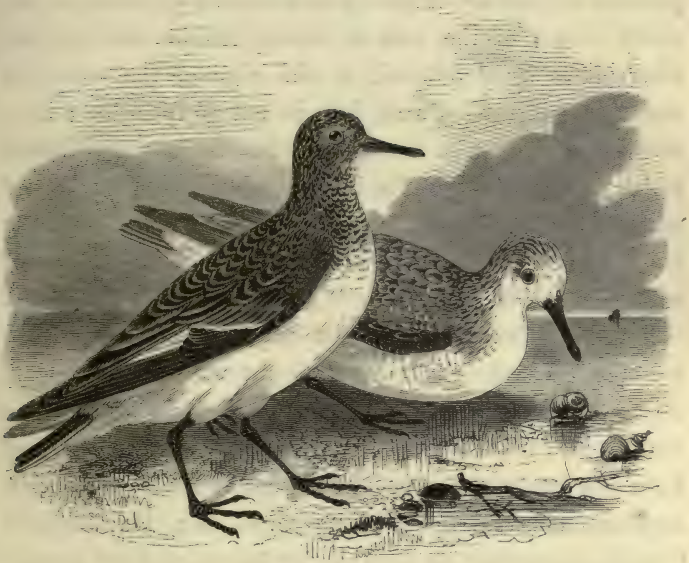
The Turnstone is well known to the ornithologists of the United States; and interesting accounts of its habits will be found in the works of Wilson and Mr. Audubon: the latter says, "My worthy friend, Dr. Bachman, once had a bird of this species alive. It had recovered from a slight wound in the wing, when he presented it to a lady, who fed it on boiled rice, and bread soaked in milk, of both of which it was very fond. It continued in a state of captivity upwards of a year, but was at last killed by accident. It had become perfectly gentle, would eat from the hand of its kind mistress, frequently bathed in a basin placed near it for the purpose, and never attempted to escape, although left quite at liberty to do so." So far south does the geographical range of this species extend in the New World, that Mr. Charles Darwin obtained specimens during the survey with the Beagle in the Straits of Magellan. On the continent of Europe this bird is found from Russia southward to Italy, and is observed at Sicily and Malta in spring and autumn on its way from and to Africa. It has been noticed as occurring at Madeira, in the vicinity of Senegal; and Dr. Andrew Smith, as well as others, have obtained specimens at the Cape of Good Hope. M. Temminck includes the Turnstone among the Birds of Japan, and mentions having received specimens also from Sunda, the Molucca Isles, and from New Guinea. The Linnean Society possess specimens from New Holland.

The adult bird in summer has the beak black; the irides dark brown; the forehead black, reaching to the eye on each side; below the eye a black patch, which curving forward and upward, goes to the base of the lower mandible, encircling a white spot at the base of the upper mandible; top of the head, the occiput, and back of the neck, white, streaked with black; sides of the neck and the scapulars rich black; interscapulars, and smaller wing-coverts, dark red; greater wing-coverts black edged with red; wing-primaries greyish black, with pure white shafts; tertials nearly black, tipped and spotted with red; the back white; rump with a transverse band of black; upper tail-coverts and the base of the tail-feathers white; the other part greyish black; all, except the two middle ones, tipped with white; chin white; sides of the neck, the throat, and upper part of the breast, rich black; lower part of the breast, belly, vent, under tail-coverts, under surface of the wing, and the axillary plume, pure white; legs and toes rich orange red, approaching vermilion red; claws black; the hind toe articulated on the inner surface of the tarsus, and directed inwards towards the other leg, not backwards as in most other birds.

The whole length of the bird nine inches and a half. From the carpal joint to the end of the wing six inches; the first quill-feather a little longer than the second, and the longest in the wing.

The sexes do not differ much in plumage; but in winter the black, white, and ferruginous portions of the plumage are not so rich in colour.

In young birds of the year the whole of the plumage of the upper surface of the body, and round the throat in front, is dull brownish black; the feathers of the body edged with yellowish white; those of the wing-coverts and tertials edged with reddish buff-colour; the chin, breast, belly, and under tail-coverts, white; the legs and toes pale orange, almost flesh colour.



THE SANDERLING.

Calidris arenaria.

Charadrius calidris,	*Sanderling Plover,*	PENN. Brit. Zool. vol. ii. p. 106.
„ „	*The Sanderling,*	MONTAGU, Ornith. Dict.
„ „	„ „	BEWICK, Brit. Birds, vol. i. p. 385.
Calidris arenaria,	*Common* „	FLEM. Brit. An. p. 112.
Arenaria calidris,	„ „	SELBY, Brit. Ornith. vol. ii. p. 208.
Calidris arenaria,	*The* „	JENYNS, Brit. Vert. p. 183.
Arenaria calidris,	„ „	GOULD, Birds of Europe, pt. xix.
Calidris arenaria,	*Sanderling variable,*	TEMM. Man. d'Ornith. vol. ii. p. 522.

CALIDRIS. *Generic Characters.*—Beak as long as the head, straight, slender, flexible, compressed at the base, with the point dilated and smooth. Nostrils basal, lateral, narrow, longitudinally cleft in the nasal furrow, which extends to the smooth point of the beak. Wings of moderate length, pointed, the first quill-feather the longest. Legs of mean length, naked above the tarsal joint. Feet with three toes, all directed forwards, with a very small connecting membrane at their base.

The Sanderling,—represented by the figure in front in its summer dress, and by that behind in the grey plumage peculiar to winter,—is pretty well known on most of the sandy shores of the seas of Great Britain and Ireland, where it is usually found, at the edge of the water, in company with the Purre, but is not so plentiful; it is occasionally seen also associated with the smaller Plovers, which it resembles in its habits, frequenting the harder parts of the sandy shore, running or flying with equal ease and rapidity. It is occasionally killed in the vicinity of large pieces of fresh water.

I have obtained specimens on our southern and eastern coast, or in the London market, in the months of January, April, June, at the end of August, and again in October; yet this bird is not considered to breed in this country, and I am not aware of any collection that is known to contain unquestionable examples of its eggs. Mr. Heysham, of Carlisle, says, that so late as the fourth of June several Sanderlings were killed on the coast in the vicinity of Brow-Houses, in full summer livery. The few that came under his inspection were so extremely fat, that upon some parts of the body it was nearly one quarter of an inch in thickness. The stomachs of two or three that were examined contained the remains of shrimps, sandhoppers, &c., and had the very strong marine scent peculiar to sea-shore feeders.

The Sanderling obtains its food principally by probing the moist sands of the sea-shores, and the contents of the stomach of those shot while thus occupied, were slender sea-worms, minute shell-fish and gravel, small shrimps, and other crustacea.

The Sanderling has been observed early in June on the west coast of Scotland by Mr. Symmonds, and by Mr.

Bullock at the northern extremity of Scotland, as late as the end of June, but was believed to go still farther north to breed. M. Nilsson says it visits the shores of Sweden, and breeds farther north. Faber states that it appears in Iceland, but leaves and goes farther north to breed on the coasts of Greenland and Labrador. Major Sabine, in the Appendix to Sir Edward Parry's First Arctic Voyage, says, "The Sanderling breeds in considerable numbers on the North Georgian Islands; several pairs were killed at different periods of the breeding-season, the males and females of which were invariably found to differ in their plumage; the general colour of the female being lighter, and having more cinereous and less of black and reddish marking than that of the male: this is especially the case on the chin, throat, and fore part of the neck; which may be described in the female as white, with a very slight sprinkling of dark spots, and scarcely any appearance of red; whereas in the males, the dark colours greatly predominate." Dr. Richardson says this bird breeds on the coast of Hudson's Bay as low as the fifty-fifth parallel. Mr. Hutchins informs us that it makes its nest in the marshes, rudely of grass, and lays four dusky-coloured eggs, spotted with black; incubation commencing in the middle of June. The Sanderling is very well known to the Ornithologists of the United States, who mention that it goes very far to the south in winter; and Mr. Gould says it is very plentiful in Brazil, from whence he has received specimens which did not present the slightest difference either from those of our own island, or from Africa and Asia.

M. Temminck says this bird is abundant in spring and autumn on the coast of Holland; it is found also on the shores of France and Italy, and occurs occasionally at Nice and Genoa in every state of plumage. It is sometimes seen in Sicily in the spring on its passage northward. It has been met with on the shores of the Black Sea: Dr. A. Smith brought specimens from South Africa; it has been found in India, M. Temminck has received it from Japan, and the island of Sunda and New Guinea.

An adult male in summer plumage, killed on the 12th of June, the bird from which the figure was drawn, has the beak black; irides brown; the feathers on the top of the head and back of the neck black in the centre, edged with rufous; interscapulars, scapulars, tertials, back, and rump, black, each feather edged with red; wing-coverts greyish black; wing-primaries black on the outer web, greyish white on the inner web, the shaft white; middle tail-feathers rather pointed and greyish black, the others greyish white; chin, throat, sides of the neck and upper part of the breast, covered with small spots of rufous and black on a white ground; all the under surface of the body and wings pure white; axillary plume white; legs, toes, and claws, black; under surface of the toes dilated and flat.

In this state of plumage it is the Ruddy Plover of authors.

The difference between the male and female when in their summer plumage, has been pointed out in the remarks of Major Sabine. The females are rather larger than the males.

The whole length of an adult bird is about eight inches. From the carpal joint to the end of the wing, four inches and seven-eighths: the first quill-feather a little longer than the second, and the longest in the wing.

In winter the plumage on the upper surface of the body is of a very light ash grey, almost white, the shaft of each feather forming a darker streak; carpal portion of the wing and the primary quill-feathers almost black; tail-feathers ash colour, edged with white; chin, throat, and all the under surface of the body, white; beak, legs, toes, and claws, black.

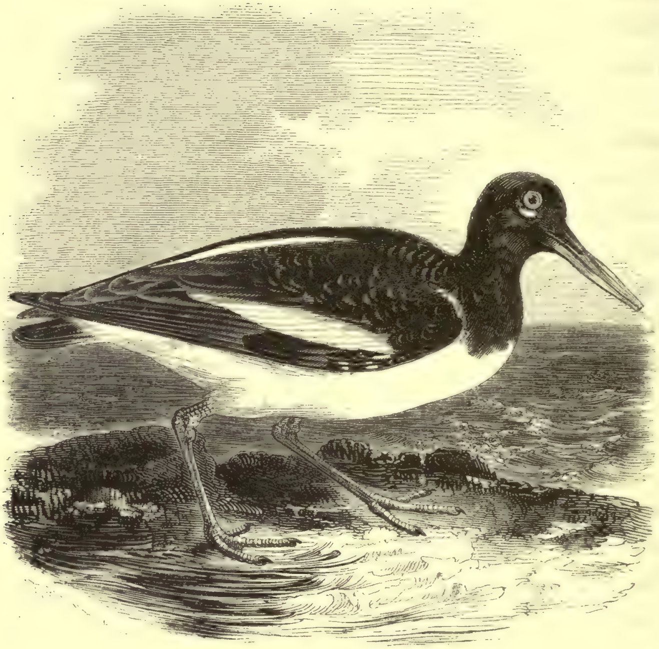
There is little or no difference in the plumage of the sexes at this season that I am aware of.

The appearance of the Sanderling in spring when in change to the plumage of summer, is prettier than at any other season; each feather on the upper surface of the body exhibits a portion of black in the centre, edged partly with rufous and partly with the remains of the white peculiar to winter; by degrees the white edging gives place to the red; the neck in front becomes speckled, but the under surface of the body remains white all the year.

A female killed at the end of August has the upper surface of the body darker than in the spring, but mixed with dull black, some red, and greyish white; almost all the red colour of the breeding-season has disappeared, but the autumn moult having commenced, a few of the greyish white feathers of the winter plumage appear intermixed with the faded remains of the tints of summer. A bird killed on the 25th of October had completed its winter dress.

Not possessing a young bird of the year in the plumage previous to its first autumn moult, I copy the following description from the Manual of the Rev. L. Jenyns:—"Feathers on the crown of the head, back, scapulars, and wing-coverts, black, edged and spotted with yellowish; between the bill and the eye a cinereous brown streak; nape, sides of the neck, and sides of the breast, pale grey, with fine undulating streaks; forehead, throat, fore part of the neck, and all the under parts, pure white: wings and tail as in the adult."

GRALLATORES. *CHARADRIIDÆ.*



THE OYSTER-CATCHER,

OR SEA-PIE.

Hæmatopus ostralegus.

Hæmatopus ostralegus,	*The Oyster-catcher,*	PENN. Brit. Zool. vol. ii. p. 112.
,, ,,	*Pied* ,,	MONTAGU, Ornith. Dict.
,, ,,	,, ,,	BEWICK, Brit. Birds, vol. ii. p. 121.
,, ,,	*Common* ,,	FLEM. Brit. An. p. 115.
,, ,,	,, ,,	SELBY, Brit. Ornith. vol. ii. p. 200.
,, ,,	*Pied* ,,	JENYNS, Brit. Vert. p. 184.
,, ,,	,,	GOULD, Birds of Europe, pt. xv.
,, ,,	*Huiterier Pie,*	TEMM. Man. d'Ornith. vol. ii. p. 531.

HÆMATOPUS. *Generic Characters.*—Beak longer than the head, straight, strong, the point much compressed, forming a wedge; culmen of the anterior part slightly convex; upper mandible with a broad lateral groove, extending one half the length of the bill; mandibles nearly equal in size and length, with the thin ends truncated. Nostrils basal, lateral, linear, pierced in the membrane of the mandibular groove. Legs of moderate length, naked for a short space above the tarsal joint; tarsi strong. Feet with three toes only, all directed forward, united at their base by a membrane; claws strong, broad, not very much pointed.

THE OYSTER-CATCHER is well known on the shores of our coast, and is also common and indigenous to Ireland; it appears to prefer sandy bays and wide inlets bounded with banks of shingle, as favourable localities for the production of the various mollusca upon which it principally subsists; the vertical edge of its truncated, wedge-like beak, seems admirably adapted for insertion between the two portions of a bivalve shell: and this bird is said to be able to detach limpets from the surface of a rock with ease and certainty. Its food appears to be the mollusca generally, worms, and marine insects. As observed by Mr. Selby, the Oyster-catcher is a handsome bird, when seen on the wing, from the well-marked contrast, and the purity of the black and white colours of its plumage; it runs with rapidity and can swim and dive with ease; may frequently be observed to swim short distances when searching for its food, but seldom dives unless to avoid or escape from an enemy. It deposits its eggs, usually four in number, on the bare ground on a shingly beach above high water-mark; the eggs are of a yellowish stone colour, spotted with ash grey and dark brown; two inches two lines in length, by one inch six lines in breadth. The female sits about three weeks, during which the male keeps watch, and becomes clamorous on the approach of an enemy; his mate attends to the signal, leaves her nest in silence, and after a circuitous flight, joins him in his endeavours to scold or decoy away the intruder. The young, when hatched, are covered with a greyish brown down.

Montagu was certainly mistaken in supposing that the

Oyster-catcher never quits the coast. Four examples are recorded to have been shot at Godalming, which is many miles from the sea; I have known this bird killed as high up the Thames as Oatlands, which is at least fifty miles from the mouth of the river. Dr. Fleming says, "Though usually considered as a shore bird, I have observed it breeding on the islands in the Tummel, at Moulincarn, between Dunkeld and Blair Athol." A correspondent in the Magazine of Natural History, vol. vi. p. 151, in reference to this subject, says, "During summer some may be always seen along the Don, from twenty-five to thirty miles from the sea; and I have been told that they breed about Kildrummy, a few miles higher up." Thomas M. Grant, Esq. of Edinburgh, also sends me word that they breed at Ballindalloch, a Highland district at least twenty miles from the sea.

I have been favoured by James Harley, Esq., of Leicester, with the following extract from his unpublished Catalogue of the Grallatorial Birds of Leicestershire and the Midland Counties. "Pied Oyster-catcher; rather rare. This bird is occasionally killed on the Trent. In January 1838, one was killed on the banks of that river; and a few years ago, a pair of these birds were killed by Mr. Bowman off Melbourne Pool, on the borders of this county."

The young birds are frequently kept tame, and will associate with domestic poultry: many persons will recollect the flock which some years ago used to run about inside the railing on the grass in front of the Pavilion at Brighton.

These birds in a wild state unite towards winter, forming small flocks, and are then very shy and difficult to approach. In spring they separate again, forming pairs; but of these pairs many associate and breed together at particular and favourite localities. Montagu says they appear to be more abundant on some parts of the sandy flat coasts of Lincolnshire than on any other part he was acquainted with. Near Skegness, on that coast, at a point called Gibraltar, there is an isolated part of a marsh, where Oyster-catchers bred in such abundance, that a fisherman informed him he had collected a bushel of eggs in a morning.

The Oyster-catcher is to be seen, as before noticed, all round our coast, from the Scilly Islands to those of Shetland. Mr. Selby mentions having observed them breeding on the Fern Islands, and upon most of the salt water firths and lochs of Sutherlandshire.

It is common in Denmark, Sweden, and on all the shores of Scandinavia, particularly on the west coast of Norway from spring to autumn, visiting the Faroe Islands and Iceland. Pennant, in his Arctic Zoology, says this bird inhabits all Russia and Siberia; that it breeds on the great Arctic flats, and extends its range to Kamtschatka. Pennant adds, that the Fins hold this bird in the utmost detestation; for they suppose that when they are engaged in the seal-chase, it gives notice to the seals of the approach of the hunters, and by that means frightens away the game.

The Oyster-catcher inhabits all the coasts of the southern parts of Europe, passing to North Africa by the line of Italy and Sicily. B. Hodgson, Esq., includes it in his birds of Nepal, and M. Temminck includes it among the Birds of Japan.

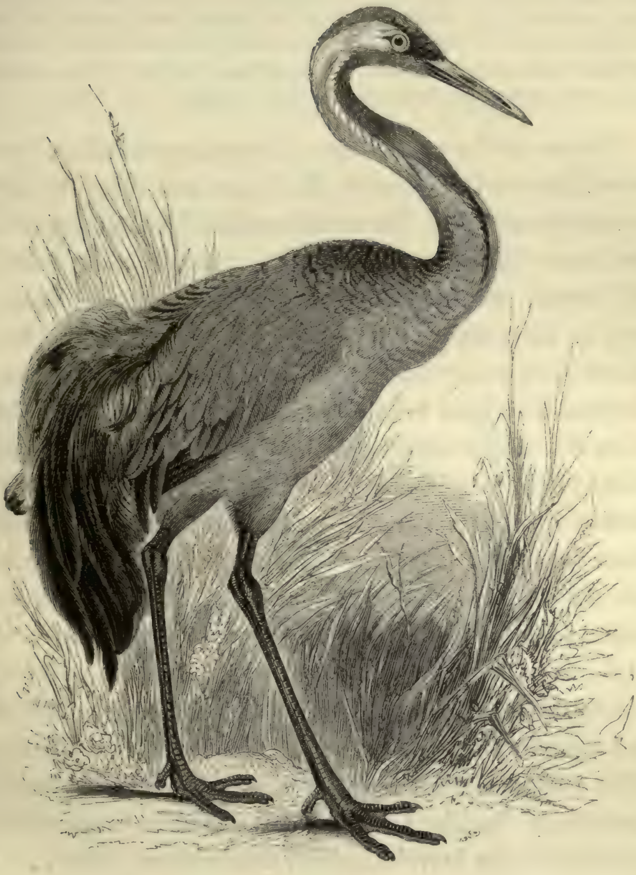
The beak is three inches long, of a deep orange at the base, lighter in colour towards the tip, greatly compressed, and ending in a thin vertical edge; the irides crimson; the eye-lid reddish orange, with a white spot below the eye; the whole of the head, the neck all round, the upper part of the breast, scapulars, inter-scapulars, smaller wing-coverts, quill-feathers, and the distal half of the tail-feathers, black; the back, great wing-coverts, part of the inner web of the primaries, upper tail-coverts, the basal half of the tail-feathers, the lower part of the breast, all the under surface of the body, under surface of the wings, and the axillary plume, pure white; the greater coverts forming a white bar on the wing; the legs and toes purplish flesh colour; the claws black.

The whole length rather more than sixteen inches. From the carpal joint to the end of the wing, nine inches and three quarters: the first quill-feather about half an inch longer than the second, and the longest in the wing.

In the winter half year adult birds have a white gorget round the front of the neck. I have known this mark assumed early in September, and borne through the winter, and over a great portion of the spring.

Young birds of the year have the feathers of the back and wings margined with brown, and they do not obtain a white gorget during their first winter.

GRALLATORES. *GRUIDÆ.*



THE COMMON CRANE.

Grus cinerea.

Ardea grus,	*The Crane,*	Penn. Brit. Zool. vol. ii. p. 7.
" "	" "	Montagu, Ornith. Dict.
" "	" "	Bewick, Brit. Birds, vol. ii. p. 2.
Grus cinerea,	*Common Crane,*	Flem. Brit. An. p. 97.
" "	" "	Selby, Brit. Ornith. vol. ii. p. 4.
" "	" "	Jenyns, Brit. Vert. p. 185.
" "	" "	Gould, Birds of Europe, pt. vii.
" "	*Grue cendrée,*	Temm. Man. d'Ornith. vol. ii. p. 557.

GRUS. *Generic Characters.*—Beak longer than the head, straight, strong, compressed, and pointed. Nostrils placed longitudinally in a furrow, large, pervious, closed posteriorly by a membrane. Legs long, strong, naked above the joint; three toes in front; middle toe united to the outer toe by a membrane; hind toe articulated high up on the tarsus. Wings moderate, rounded in form; the first quill-feather shorter than the second; the third the longest in the wing.

THOUGH at the present time only an occasional and very rare visiter to this country, the Crane was formerly much more frequent. Dr. Turner states that he had often seen the young birds in our marshes. Sir Thomas Browne of Norwich, who wrote in the time of Charles the Second, says in his works, "Cranes are often seen here in hard winters, especially about the champain and fieldy part. It seems they have been more plentiful, for in a bill of fare, when the mayor entertained the Duke of Norfolk, I met with Cranes in a dish." * In the Norfolk Household Book, already quoted, under the articles on the Pheasant and Great Bustard, I find three separate notices of Cranes; the first for a Crane and VI Plovers, xx*d.*; the second, four Mallards and a Crane killed with the Crossbowe; the third, item, on Thursday for a Crane, VI*d.*; while in Dugdale's *Origines Juridiciales*, as quoted at page 366, we find that the price of a Crane in London was 10*s.* Leland, in his *Collectanea*, includes in the bill of fare at the feast of Archbishop Neville, two hundred and four Cranes; and, according to Sir David Lindsay, Cranes formed also part of the bill of fare at a grand hunting entertainment, given by the Earl of Athol to James the Fifth of Scotland and the Queen Mother, on the banks of the Loghaine, in Glen Tilt. Ray mentions the winter visits of this large bird; and Willughby, in an abridgment of some statutes relating to the preservation of fowl, refers at page 52 to a fine of twenty pence levied as a forfeit for every egg of a Crane or a Bustard taken and destroyed. Smith, in his History of the County of Cork, vol. ii. p. 342, says the Crane was seen in that county during the remarkable frost of 1739; and the editor of the last edition of Pennant's British Zoology, mentions four instances of the occurrence of the Crane within his memory.

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* Wilkin's edition, vol. iv. p. 314.—*Pickering*, 1835.

Dr. Edward Moore, in his Catalogue of the Wading Birds of Devonshire, says a fine specimen of the Crane was shot in September 1826 in the parish of Buckland Monachorum, near Plymouth, which is now in Mr. Drew's collection; it was wounded in the wing, and made a most desperate resistance. Mr. Selby refers to one killed in Oxfordshire in December 1830, and Frederick Holme, Esq., had the kindness to send me word that a Crane was shot at Chimney-ford, on the Isis, in Oxfordshire, in December 1831. Dr. Fleming mentions that a small flock appeared, during harvest in 1807, in Tingwall, Zetland, as he was informed by the Rev. John Turnbull, the worthy minister of the parish, who added, that they fed on grain. Mr. Robert Dunn, in his Ornithologist's Guide to Orkney and Shetland, says, that this bird is an occasional visiter in severe winters or stormy weather, and that two examples were shot in Shetland between his first visit in March 1831, and the following spring.

M. Nilsson mentions that the Crane is seen in Sweden in spring and autumn, and that it goes to the marshes of Scania to breed; it is also said to breed in Norway, which has been confirmed to me by Richard Dan, Esq.; and Linnæus, in his Tour, mentions their appearance in Lapland. Pennant says they also visit Russia and Siberia. Mr. Gould says, "Flocks of these birds are seen at stated times in France and Germany, passing northwards and southwards, as the season may be, in marshalled order, high in the air, their sonorous voices distinctly heard even from their elevated course. Occasionally they descend, attracted by newly sown fields, or the prospect of finding food in marshes, on the borders of rivers, or even the shores of the sea, but generally they continue their flight unchecked towards their destined resting-places."

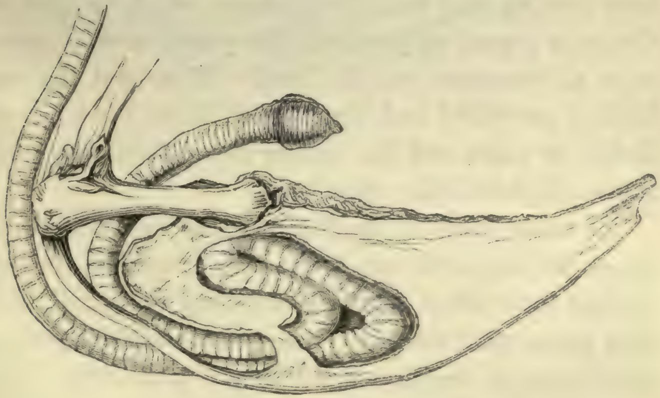
These birds are seen also periodically in Spain, in Provence, at Genoa, and in Italy. M. Malherbe says that in Sicily, on the occurrence of the first fine weather in spring, Cranes are seen at a great height in the air on their way north from Algeria; a few remaining for a short time to rest, and then pursue their route. Egypt, and various parts of Africa, are said to be their winter quarters. They are seen in Syria. Mr. Strickland, in his enumeration of birds at Smyrna, includes a flock of Cranes seen in the plain of Sardis at the end of April 1836; and M. Hohenacker includes the Crane among the birds of the country between the Black and the Caspian Seas. This species is found in Thibet, Nepal and Calcutta, and M. Temminck says that specimens from Japan exactly resemble those of Europe.

The Crane, having a strong and thick muscular stomach, its food is of a more variable nature than is usual among waders generally; it will feed occasionally on grain and aquatic plants; at other times it makes a meal of worms, reptiles, and mollusca.

The nest is usually placed among reeds, thick osier-beds, or the luxuriant vegetation of morasses, and the borders of lakes, but sometimes also on the top of old buildings or ruins, where solitude promises security. The Crane lays but two eggs: these are rare in collections. I possess one, given me by Mr. W. I. Tuke, of York: this egg measures four inches in length, by two inches and three-eighths in breadth, of a pale brown colour, blotched and spotted with two shades of darker brown.

The singular structure of the windpipe and its convolutions lodged between the two plates of bone forming the sides of the keel of the sternum in this bird have long been known. The first illustration here given is a representation of the breast-bone of a young male Crane, in which the trachea, or windpipe, quitting the neck of the bird, passes downwards and backwards between the branches of the furcula, or merrythought, towards the inferior edge of the keel, which is hollowed out to receive it; into this groove, formed by the separation of the sides of the keel, the trachea passes, and is firmly bound therein by cellular membrane, and after making three turns, passes again forwards, then upwards, and ultimately backwards to be attached to the two lobes of the lungs by the bronchial divisions.

The second representation, in the next opening, is taken from the sternum of an old female Crane, and exhibits the trachea still farther extended, and occupying nearly the whole cavity between the two bony plates forming the keel: a portion of the plate nearest the observer in both



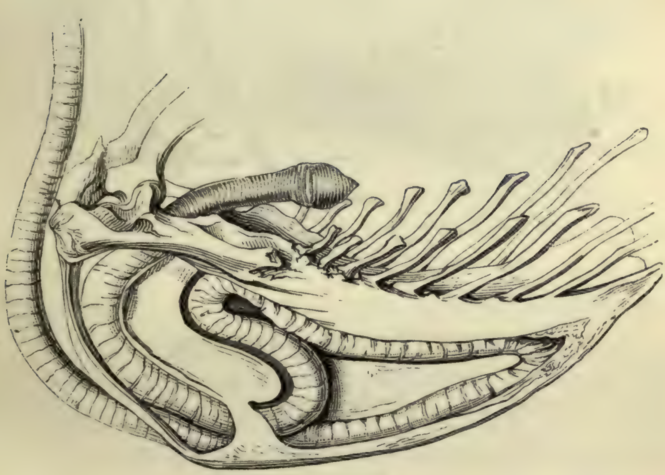
these illustrations being represented as cut away to show the character and depth of the insertion.

The usual form of furcula, or merrythought, it will be observed, does not prevail in this bird: it is not here, as in most other birds, a single, slightly-attached bone, but has the point of union of the two branches firmly ossified to the keel, or may be considered as a prolongation of the anterior portion of the keel itself extended to the head of each clavicle, and affording a firm support to the wings.

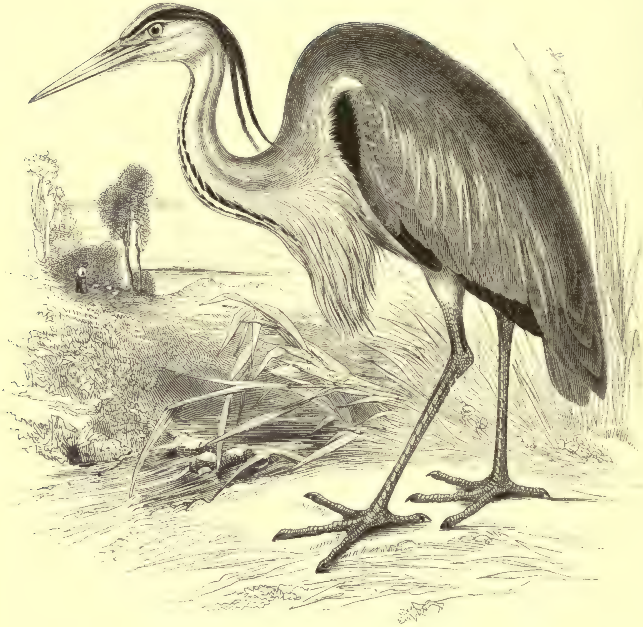
In the adult male, the beak is greenish yellow at the base, lighter in colour towards the point; the irides red; the forehead, crown, nape, and back of the neck, dark bluish ash; chin, throat, and front of the neck, of the same dark colour, but descending four or five inches lower in front; from the eye, over the ear-coverts, and downwards on the side of the neck, dull white; general colour of the back, wings, rump, tail-feathers, and all the under surface of the body, ash grey; wing-primaries black; the tertials elongated, the webs unconnected, and reaching beyond the ends of the primaries. The well known plumes of the Crane are these tertial feathers, with their unconnected webs forming long hair-like filaments, which the bird can elevate or depress at pleasure. They were formerly much worn as ornaments on the head. These and the tail-feathers are varied and tipped with bluish black; under surface of wings and the axillary plume light grey; legs and toes bluish black; claws black.

The whole length of the bird described four feet. From the carpal joint to the end of the wing, twenty-one inches; the first quill-feather a little shorter than the fourth, but a little longer than the fifth; the second and third feathers nearly equal in length, and the longest in the wing. The beak measured four inches and a half; the tarsus nine inches, the bare part above it four inches.

The sexes, when old, are alike in plumage, but the males are larger than the females. Young birds have less variation in colour about the head, and the ash grey plumage of the body is mixed with dull brown.



GRALLATORES. *ARDEIDÆ.*



THE COMMON HERON.

Ardea cinerea.

Ardea cinerea, Common Heron,	Penn. Brit. Zool. vol. ii. p. 10.
„ *major,* „ „	Montagu, Ornith. Dict.
„ „ *The* „	Bewick, Brit. Birds, vol ii. p. 8.
„ *cinerea, Common* „	Flem. Brit. An. p. 95.
„ „ „ „	Selby, Brit. Ornith. vol. ii. p. 11.
„ „ „ „	Jenyns, Brit. Vert. p. 186.
„ „ „ „	Gould, Birds of Europe, pt. viii.
„ „ *Heron cendré,*	Temm. Man. d'Ornith. vol. ii. p. 567.

Ardea. *Generic characters.*—Beak long, strong, straight, compressed in a lengthened cone; upper mandible slightly channelled, ridge rounded. Nostrils lateral, basal, pierced longitudinally in the groove, and half closed by a membrane. Legs long, slender, naked above the tarsal joint. Toes three in front, the two outer united by a membrane; one toe behind, directed inwards: claws long, compressed, sharp, the middle claw denticulated on the inside. Wings of moderate size; the first quill-feather a little shorter than the second or third, which are the longest in the wing.

The Common Heron is one of the most numerous, as well as the best known, of the group of truly wading birds now under consideration; and formerly, in the palmy days of falconry, the places where they bred were almost held sacred; the bird was considered royal game, and penal statutes were enacted for its preservation. Now, however, the Heron is disregarded, and left to depend on its own sagacity for its safety. During winter the Heron is watchful, shy, and solitary, seldom more than one being seen at the same time or place; but early in spring numbers are seen together, resorting to a favourite wood, which they have probably occupied during their breeding season for years in succession. At this time of the year they resemble the Rooks in many of their habits, building like those well-known birds on high trees, generally upon large oaks or tall firs, and in such numbers do they associate, that Pennant mentions having himself counted more than eighty nests upon one oak at Cressy Hall, near Spalding in Lincolnshire, —an estate then belonging to the Heron family, one of the most ancient in this country. Sometimes Herons build on precipitous rocks near the coast, as at South Stack Lighthouse, near Holyhead, mentioned by Mr. Eyton, and at the Great Orme's Head; they are said also to build occasionally on the ground, among reeds and rushes. The nest is of large size, having much the appearance of that of the Rook, but rather broader; it is formed of sticks, and lined with wool. The female lays four or five eggs, of a uniform sea green colour, two inches three lines in length, by one inch nine lines in breadth, and incubation lasts about twenty-eight days. When the young are hatched, both parents assist in providing them with food until they are able to fly, and have learned to supply themselves. Previous to this time, when the heronry is visited by strangers, the old birds leave their nests, and skimming in circles, high above the trees, betray great anxiety till the party have retired. The food of the Heron consists of fish, reptiles, and small mammalia. When the Heron has only himself to provide for, he usually fishes late in the evening, and very early in the morning, sitting the whole day perched on the branch of a large tree.

When fishing, the Heron stands motionless in shallow water, with the head drawn back towards the shoulders, ready to strike or seize with his sharp beak whatever may happen to come within his reach. If an eel chance to be the object caught, the Heron has been seen to quit the water to make the more sure of his prey, by beating it against the ground till it is disabled. Mr. Dunn has observed "in Orkney and Shetland, where Herons are very plentiful, that this bird, let the wind be high or low, invariably selects the lee side of the island or rock on which the wind may be setting."

A pair of Herons, kept by Dr. Neill in his garden at Canonmills, near Edinburgh, produced two sets of eggs; during incubation the male frequently took his place on the nest when the female went off to feed, but unfortunately both the female and the eggs were destroyed by accident.* Dr. Neill adds, "a large old willow tree had fallen down into the pond, and at the extremity, which is partly sunk in the sludge, and continues to vegetate, Water Hens breed. The old cock Heron swims out to the nest, and takes the young if he can. He has to swim ten or twelve feet, where the water is between two and three feet deep.

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* Mr. Selby's British Ornithology, vol. ii. p. 13.

His motion through the water is slow, but his carriage stately. I have seen him fell a rat at one blow on the back of the head, when the rat was munching at his dish of fish."

The Heron is said to be very long lived, and was formerly in considerable estimation as an article of food. Heronries are occupied by the birds from spring till August: during winter a few stragglers only are to be seen, as though they were left, or paid occasional visits, to maintain the right of occupation. The late Dr. Heysham, in his Catalogue of Cumberland Animals, attached to Hutchinson's history of that county, refers to the annual battles which took place at Dalham Tower in Westmorland, between two flocks of Herons and Rooks for the possession of particular trees.

Some portion of Ornithological interest being attached to Heronries, I have added a brief catalogue of those I have been able to ascertain, collected from various sources, arranged in alphabetical order of English counties.

Berkshire.—Windsor Great Park, two.

Cheshire.—Dunham Massey, the seat of the Earl of Stamford; Combermere Abbey, belonging to Lord Combermere; Hooton, on the Mersey, the seat of Sir T. M. Stanley, Bart.; Ardley Hall, the residence of R. E. Warburton, Esq.; and at Oulton Park, the seat of Sir Philip Grey Egerton, Bart.

Cumberland.—Gowbarrow Park, near Ulswater Lake; and at Graystock, or Graystoke.

Devonshire.—Powderham Castle; another at Sharpham on the Dart, and a third at Warleigh on the Tamar, the seat of the Rev. W. Radcliff.

Dorsetshire.—Brownsea Island, near Poole.

Durham.—Ravensworth Castle, the seat of Lord Ravensworth.

Essex.—Wanstead Flats.

Kent.—Cobham Hall, the seat of Earl Darnley; and at Penshurst Park.

Lincolnshire.—Formerly at Cressy Hall, near Spalding,—a very large one now destroyed, but two others established in the neighbourhood. Downington. Manby, near Brigg, belonging to Lord Yarborough; another at Skillingthorpe Wood, near Lincoln.

Middlesex.—Osterley Park.

Norfolk.—Didlington, the seat of Colonel Wilson.

Northampton.—Althorpe, the seat of Earl Spencer.

Northumberland.—Chillingham Park, the seat of Lord Tankerville.

Shropshire.—At the Mere, near Ellesmere.

Somersetshire.—Picton, belonging to the Earl of Carnarvon, and at Brockley Woods, near Bristol.

Surrey.—Cobham Park, the seat of H. Coombe, Esq.; and at Ashley Park, Walton-on-Thames, the seat of Sir Henry Fletcher, Bart.

Warwickshire.—Warwick Castle, the seat of the Earl of Warwick.

Westmoreland.—Dalham Tower, the seat of Colonel Wilson.

Yorkshire.—One at the seat of R. Thompson, Esq., near Boroughbridge; another at Walton Hall, the residence of Charles Waterton, Esq.; and at Hutton, near Beverly, the seat of Mr. Bethel.

The Heron visits Scandinavia in summer, going occasionally as far north as the Faroe Islands, Iceland, and the south coast of Greenland; it is found also in Russia and Siberia, and southward over the European continent, being most abundant in Holland. It is seen at Corfu, Sicily, Malta and Crete, on its passage between the two continents. It is found in North Africa, at Madeira, and is said to visit the Cape. The Russian naturalists include it among the birds observed at the foot of the Caucasus, it inhabits India, China, and Japan; and Dr. Horsfield includes it in his Catalogue of the Birds of Java.

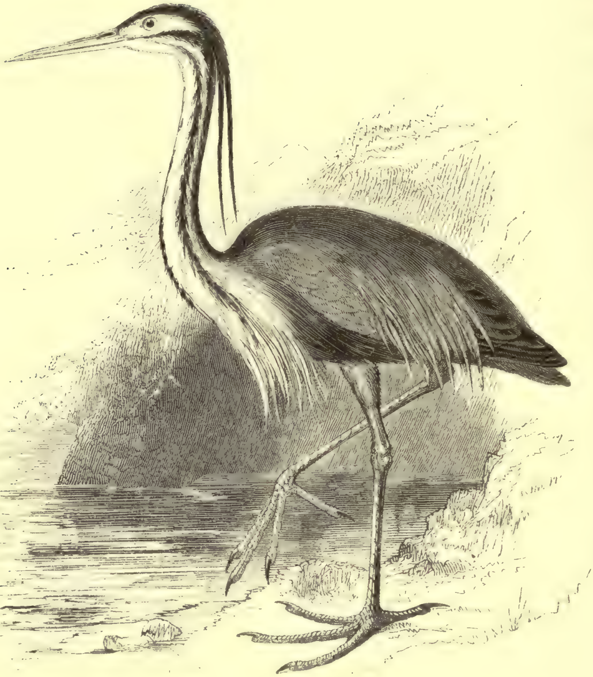
In the adult bird the beak is yellow, darkest in colour towards the point; the lore yellowish green; irides yellow; head and cheeks greyish white; the elongated occipital feathers forming the plume dark slate blue: upper surface of the body and wings delicate French grey; the wing-primaries black; the tail-feathers slate grey; the neck white, varied in front throughout its length with dark bluish grey, forming elongated spots; the white feathers at the bottom of the neck, before the chest, elongated: under surface of the body greyish white, streaked with black; legs and toes greenish yellow; claws brown.

The whole length, from the point of the beak to the end of the tail, about three feet. From the carpal joint to the end of the wing, seventeen inches: the first and the fifth quill-feathers equal in length; the second, third, and fourth, also nearly equal in length, and the longest in the wing.

Adult females resemble the males in plumage, but the colours are not quite so pure and bright.

Young birds during their first and second year, have no elongated feathers at the back of the head, or at the bottom of the neck in front; head and neck ash colour, with dull dusky grey streaks in front; the upper mandible of the beak greenish brown, the under mandible yellow; the legs darker in colour, almost brown, and the grey plumage on the upper surface of the body and wings tinged with brown.

GRALLATORES. *ARDEIDÆ.*



THE PURPLE HERON.

Ardea purpurea.

Ardea caspica,	*African Heron,*	PENN. Brit. Zool. vol. ii. p. 28.
" "	" "	MONTAGU, Ornith. Dict.
" *purpurea,*	*Purple-crested Heron,*	BEWICK, Brit. Birds, vol. ii. p. 15.
" "	*African Heron,*	FLEM. Brit. An. p. 96.
" "	*Crested Purple Heron,*	SELBY, Brit. Ornith. vol. ii. p. 15.
" "	*Purple Heron,*	JENYNS, Brit. Vert. p. 186.
" "	" "	GOULD, Birds of Europe, pt. xx.
" "	*Heron pourpré,*	TEMM. Man. d'Ornith. vol. ii. p. 570.

THIS species is found in the temperate and warmer parts of Europe, in Africa, and in Asia: and since the days of

Pennant and Montagu so many instances have been recorded of the occurrence of this bird, in different states of plumage, in this country, on the southern coast by Dr. Edward Moore of Plymouth, and of other examples on our eastern coast by Mr. Selby and Mr. Hoy, that no doubt can remain of the propriety of including it in a History of British Birds. Mr. Couch, of Polperro, sent Bewick a drawing taken from a specimen which alighted on a fishing-boat two or three leagues from the coast of Cornwall. The bird was caught and brought on shore alive, but soon died. Dr. Edward Moore notices two examples, both young birds, in Devonshire; and in February 1839, Plumptre Methuen, Esq., sent me word that he had obtained a specimen shot near Plymouth. Mr. Selby, who published in 1833, says, "I may mention that in the month of May 1830, a fine male Purple Heron, that was killed in Norfolk, came into my possession, and its mate into that of Sir William Jardine;" and in a note, adds, "since writing the above, I have heard of three other specimens, two killed in Norfolk, and another near to London." Mr. Hoy, in the Magazine of Natural History for 1837, vol. x. p. 116, says, "some time in the month of November 1835, a Purple-crested Heron was obtained on the borders of a large piece of water, known by the name of King's Fleet, near the mouth of the Woodbridge river, in Suffolk. The bird rose from the thick reeds which skirt the water, and was at first supposed to have been a Bittern by the person who shot it. This bird was in the plumage of the first year. From the redness of its colours, at this age, it may be readily mistaken for the Bittern when first seen. I have known two other instances of this species of Heron occurring in this county; I have also known two or three individuals to have been met with in Norfolk, within a few years." Mr.

Thompson has also made known one instance of this bird having been killed in Ireland.

The Purple Heron may even be considered rather common in Holland, from whence adult birds and their eggs are not unfrequently sent to the London market.

The habits of the Purple Heron are more like those of the Bittern than of the Heron last described, preferring dense reed beds, morasses, and marshy swamps, abounding in luxuriant vegetation, under cover of which it conceals itself, and among which it makes its nest on the ground, laying three eggs of pale asparagus-green colour, two inches four lines long, by one inch seven lines in breadth. The food of this species consists of small mammalia, reptiles, fishes, and aquatic insects.

The Purple Heron is found occasionally in Germany, is, as before observed, rather common in Holland, and in the low marshy districts of France. M. Necker says they are most frequently seen in Switzerland at the end of April or the beginning of May, and some few remain in that country to breed; it is found also in Provence and in Italy. It visits Corfu, Sicily, Malta and Crete, in spring and autumn. It inhabits Nubia, and has been taken in other parts of Africa as far south as the Cape of Good Hope. Eastward of Europe, the Russian naturalists found it in the countries near the Black and the Caspian Seas; it inhabits the marshes of the rivers and lakes of Tartary; Major Franklin, B. Hodgson, Esq., and Mr. Blyth, have obtained it in different parts of India. Mr. Selby says it is found in the Philippine Isles; and Dr. Horsfield includes it among the Birds of Java.

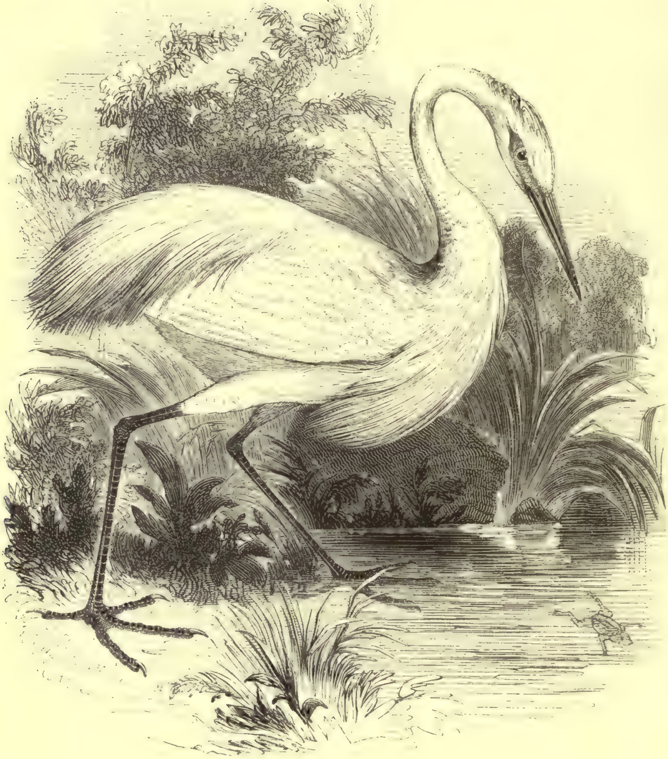
The adult bird has the beak yellow, darkest in colour at the base; the lore and irides yellow; the top of the head, the occiput, and the elongated occipital plumes, black, tinged with blue; cheeks and sides of the neck fawn colour, with descending streaks of bluish black; back and wing-coverts dark slate grey; the elongated filamentous feathers chestnut; tail-feathers bluish grey, the two central feathers dark slate grey; the chin pale buff; the neck reddish buff, the elongated feathers at the bottom of the neck in front a mixture of pale buff, chestnut, grey, and black; under wing-coverts chestnut, the colour appearing round outside the point of the shoulder; the breast rich maroon colour; the belly a mixture of maroon and dark slate grey; the flanks ash grey; thighs reddish buff; legs and toes dark reddish brown; the claws black.

Whole length from the beak to the end of the tail twenty-nine inches. From the carpal joint to the end of the wing fourteen inches: the first quill-feather shorter than either of the next four; the second, third, fourth, and fifth, equal in length, and the longest in the wing.

The adult of both sexes are alike in plumage.

The young birds, till their third year, are without the occipital crest, as well as the elongated feathers at the base of the neck, and on the scapulars. The chin is white; the forehead blackish grey; the crown and occiput grey, tinged with reddish brown. The neck is pale reddish brown, without the black lists. The front of the neck is yellowish white, with longitudinal black spots. The back, scapulars, wings, and tail, deep grey; the feathers margined with reddish brown. The belly and thighs are reddish white. The upper mandible is blackish brown; the under one, the lores, and eyes, are pale yellow.

GRALLATORES. *ARDEIDÆ.*



THE GREAT WHITE HERON.

Ardea alba.

Ardea	*alba,*	*White Heron,*	Penn. Brit. Zool. vol. ii. p. 19.
„	„	*Great White Heron,*	Montagu, Ornith. Dict.
„	„	„ „ „	Bewick, Brit. Birds, vol. ii. p. 12.
„	*egretta,*	„ „ „	Flem. Brit. An. p. 95.
„	*alba,*	„ „ „	Selby, Brit. Ornith. vol. ii. p. 18.
„	„	„ „ „	Jenyns, Brit. Vert. p. 187.
„	„	*Great Egret,*	Gould, Birds of Europe, pt. xix.
„	*egretta,*	*Heron Aigrette,*	Temm. Man. d'Ornith. vol. ii. p. 572.

The Great White Heron can only be considered as an accidental visiter. Dr. Latham refers to one example killed in Cumberland not many years ago. Montagu, in his Supplement, says, "A White Heron made its appearance on the borders of the river Avon, in Devonshire, in the autumn of the year 1805, where it was frequently observed in company with three or four of the common species, and sometimes alone. The Rev. Mr. Vaughan, who had frequent opportunities of observing it, and used every means to procure it, thinks, from its apparently superior size, it must have been *Ardea alba*, and not a variety of the Common Heron; but its extreme wariness disappointed the many attempts to shoot it, although it continued within the range of a few miles for two months."

The Rev. Revett Sheppard, and the Rev. William Whitear, in their catalogue of the Norfolk and Suffolk Birds, published at the commencement of the fifteenth volume of the Transactions of the Linnean Society, say, "that on the 3rd of October 1834, in a walk on the banks of the river Stour, we observed a large White Heron cross over from the Suffolk to the Essex side of the river. It appeared to be pure white, and to stand up rather taller than some Common Herons, which were feeding not far off. A similar bird was observed in the spring on the Oakley shores; and, subsequently to our observation, one was seen on the banks of the river Orwell." But the most valuable addition to our knowledge of the occurrence of this species in England, was supplied by Mr. Arthur Strickland in a communication made to the Natural History Section of the British Association, at its meeting at Newcastle in August 1838, as published in the seventh volume of the Reports. Mr. Strickland stated, "that this bird had been unjustly excluded from the catalogue of occasional visiters to this country by late authors, as he could prove on unquestionable authority that it had been killed of late years in more cases than one. The first instance was twelve or thirteen years ago: a bird of this species was seen for some weeks about Hornsea Moor, in the East Riding of Yorkshire; it was some time after presented to the author, in whose collection it is at present, in perfect preservation. Another, in full summer plumage, was killed by a labourer in the fields of James Hall, Esq., of Scarborough, near Beverley, about three years ago, and is now in the possession of that gentleman. Another specimen of this bird is in the collection of Mr. Foljambe, of Osberton, with a label on the case stating it to have been killed near that place. A careful examination of these specimens will, Mr. Strickland has no doubt, prove that this bird is properly separated from the large Egret of North America, which has been frequently placed in our collections for the British species." To these I may add a notice of one killed in Lincolnshire, but where the specimen is deposited I do not know; and lastly, Mr. Frederick Holme sent me the measurements of a specimen shot on the Isis in Oxfordshire, in September 1833.

A splendid specimen of the Great White Egret was killed in June 1840 on the sands near the village of Tyningham, in the Frith of Forth, about seven miles from Haddington.

This beautiful species of Heron was included in the Swedish Fauna by Linnæus and Retzius, who say of it, *Habitat in Scania, visa ad Araslof.* M. Nilsson, who is now Professor of Natural History at Lund, the capital of Scania, says, in his Ornithology of Sweden, vol. ii. p. 38, that it has not been found there since within his knowledge. It is an accidental visiter to Germany, France, Provence, and Italy. Has been taken in Corsica and Sardinia; but is more common among the islands of the Grecian Archipelago, in Turkey, and in Hungary. Mr. Strickland says it frequents the salt marshes west of Smyrna. Messrs. Dickson and Ross saw a few at Erzeroom, about the river from the beginning of May till October, sometimes in flocks, and sometimes solitary; and the Russian Naturalists found this bird in the spring on the borders of the salt lakes at Bakou. Large White Herons, brought from India by Colonel Sykes and Major Franklin, were considered to be of the same species as the European bird, although a little smaller in size. It feeds on small fish, reptiles, mollusca, and aquatic insects, and breeds on the ground among reeds and herbage, producing four or five large bluish green eggs.

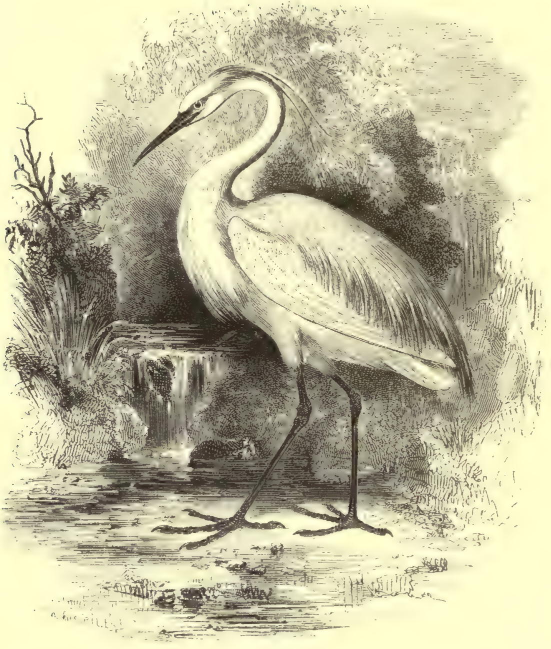
Adult birds have the beak yellow at the base, black towards the point; the lore and bare space round the eye, pale green; irides yellow; the whole plumage white; the feathers of the back of the head, and bottom of the neck in front, elongated; the interscapulars and dorsal feathers very much elongated and filamentous; legs, toes, and claws, almost black.

Adult males and females are alike in plumage.

The whole length from the point of the beak to the end of the tail exceeds three feet by a few inches. From the eye to the end of the beak, four inches seven-eighths; bare part of the tibia three inches and a half; length of the tarsus six inches and a half; middle toe and claw four inches and one quarter.

Young birds do not acquire the elongated feathers during their first or second year.

GRALLATORES. *ARDEIDÆ.*



THE LITTLE EGRET.

Ardea garzetta.

Ardea garzetta,	*Egret Heron,*	**Penn.** Brit. Zool. vol. ii. p. 21.
,, ,,	*The Egret,*	**Montagu,** Ornith. Dict.
,, ,,	,, ,,	**Flem.** Brit. An. p. 96.
,, ,,	*The Little Egret,*	**Bewick,** Brit. Birds, vol. ii. p. 18.
,, ,,	*Little Egret Heron,*	**Selby,** Brit. Ornith. vol. ii. p. 21.
,, ,,	,, ,, ,,	**Jenyns,** Brit. Vert. p. 187.
,, ,,	*The Little Egret,*	**Gould,** Birds of Europe, pt. v.
,, ,,	*Heron garzette,*	**Temm.** Man. d'Ornith. vol. ii. p. 574.

Pennant says, "We once received out of Anglesey the feathers of a bird shot there, which we suspect to be the Egret; this is the only instance, perhaps, of its being recently found in England. One was shot in Ireland in the year 1793. That it was formerly very frequent here, appears by some of the old bills of fare: in the famous feast of Archbishop Nevil, we find no less than a thousand *Asterides*, *Egrets*, or *Egrittes*, as it is differently spelt. Perhaps the esteem they were in as a delicacy during those days, occasioned their extirpation in our islands; abroad they are still common, especially in the southern parts of Europe, where they appear in flocks." Dr. Fleming remarks, "that it is possible the Lapwing may have been there referred to, as the most common bird with a crest." To this opinion Mr. Selby subscribes. Aigrette and egret are common terms for a tuft of feathers; and the Little Egret appears to have been much too rare a species in this country to have afforded the supply. That the Little Egret ought, however, to be retained in our catalogues as a British Bird,—which has been denied,—the following evidence will sufficiently prove.

Mr. Templeton in his Catalogue of the Vertebrate Animals of Ireland, says of this bird, "There is a specimen in the Dublin Museum, which was shot in the harbour of Cork, in 1792."

The Rev. L. Jenyns, in his Manual of British Vertebrate Animals, says of this bird, "In April 1824, two specimens are recorded to have been killed at Penzance in Cornwall, and one of them to have been preserved." In this case, I believe, Mr. Couch, the author of the Cornish Fauna, was the authority.

J. C. Dale, Esq., the well-known Entomologist, has recorded his memorandum of one having been shot near the river Stour, at Christchurch, Hants, in the beginning of July 1822, by the late Mr. William Lockyer, who sold it to Mr. Barrow, of Christchurch, by whom it was preserved.

The late W. Christy, jun., published the following paragraph in the Magazine of Natural History for 1836, page 647:—"I have a very fine specimen of the Egret, said to have been shot at or near Sutton Coldfield, in Warwickshire. I bought it of a very respectable bird-stuffer, who assured me he had received the bird direct from the person who shot it. Still I confess I had my doubts, and bought the skin more for its beauty than as an authentic British specimen. However, during a visit in April last to Lord Mount Norris, at Arley Hall, I happened to meet with a gentleman, who assured me that within the last few years he had known of three specimens of the Egret, and two of the Little Bittern, having been shot at Sutton Coldfield. I therefore think there is no doubt of its occurrence in this country, though it must be classed among our rarest birds."

The Rev. Robert Holdsworth, of Brixham, to whom I am indebted for many valuable communications in Natural History, sent me word that in 1816 a bird was shot on Flatoars, a shoal in the river Dart, dry at low-tide, which exactly corresponded with the description of the Egret in Montagu's Ornithological Dictionary as a bird of the second year, being tinged with grey on the neck and breast.

The Little Egret has occurred occasionally in Germany and in France; there is a specimen in the Museum at Geneva that was obtained in Switzerland: it occurs in Spain and in Provence, at Genoa occasionally in the month of May, and in Italy, in Sardinia, in Sicily, from whence I have seen a specimen very lately,—the Grecian Archipelago, and in Turkey. Messrs. Dickson and Ross have sent the Zoological Society an example from Erzeroom, and M. Hohenacker, the Russian naturalist, includes it among the birds of the country between the Black and the Caspian Seas.

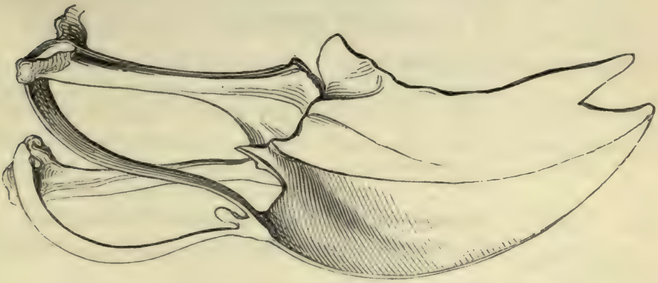
The Little Egret breeds in marshes, and produces four or five white eggs.

The adult bird has the beak black; the lore green; the irides yellow; the whole of the plumage a pure and delicate white; the feathers of the occiput and the bottom of the neck in front elongated; those of the back greatly lengthened and filamentous; the legs black; toes blackish green; claws black.

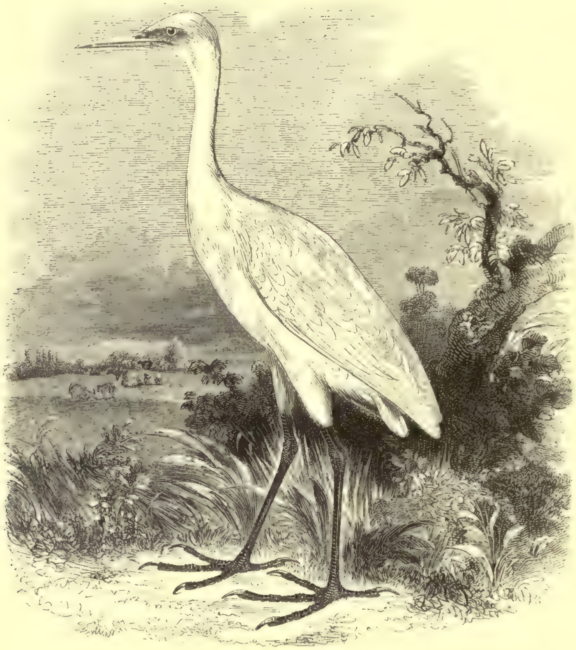
Whole length twenty-four inches. From the beak to the feathers on the forehead, three inches and a half; from the carpal joint to the end of the wing, eleven inches and a quarter; the first and fourth quill-feathers equal in length; but not so long as the second and third, which are also equal in length, and the longest in the wing; length of tarsus four inches; bare part above two inches and a half.

Young birds are said to be greyish white, and without the elongated plumes.

The vignette below represents the breast-bone of the Common Heron, about one-third less than the natural size.



GRALLATORES. *ARDEIDÆ.*



THE BUFF-BACKED HERON. (Adult.)

THE LITTLE WHITE HERON. (Young.)

Ardea russata.

Ardea æquinoctialis,	*Red-billed Heron,*	Penn. Brit. Zool. vol. ii. p. 25.
" "	*Little White Heron,*	Montagu, Suppl. to Ornith. Dict.
" "	" " "	Bewick, Brit. Birds, vol. ii. p. 20.
" "	" " "	Flem. Brit. An. p. 97.
" *russata,*	*Buff-backed Heron,*	Selby, Brit. Ornith. vol. ii. p. 24.
" "	" "	Jenyns, Brit. Vert. p. 188.
" "	*Rufous-backed Egret,*	Gould, Birds of Europe, pt. xx.
" "	*Heron aigrette dorée,*	Temm. Man. d'Ornith. pt. iv. p. 377.

The first, and, as far as I am aware, the only notice of the occurrence of this rare bird in England was communicated to the Linnean Society by Colonel Montagu on the 5th of May 1807, and appears in the ninth volume of the Transactions of that Society, page 197. A more detailed account was afterwards published by Montagu in the Supplement to his Ornithological Dictionary, from which some of the following particulars are derived.

"This elegant little species of Heron, which was shot near Kingsbridge in Devonshire in the latter end of October 1805, had been seen for several days in the same field, attending some cows, and picked up insects, which were found in its stomach. It was by no means shy, and was fired at a second time before it was secured. The situation where it was shot is the southern promontory of Devon, very near the coast, between the Start and the Prawl." I have since learned from the Rev. Robert Holdsworth, that this ornithological prize was shot by Mr. F. Cornish, at South Allington, in the parish of Chivelstone. It was placed in Colonel Montagu's collection by Mr. Nicholas Duscombe, of Kingsbridge, and the specimen is still preserved in the British Museum. It is a young bird, and proved on dissection to be a female.

This specimen, Colonel Montagu observes, "appears to be allied to that variety found at Bologna in Italy, which is described to have the top of the head and the neck nearly of a saffron colour; the breast the same, but paler,—perhaps a sexual distinction. The legs in that variety are said to be saffron colour: it must, however, be recollected, that the colour of the fleshy parts, as well as the plumage, sometimes depend on age."

The plumage here referred to resembles that of the adult bird of this species, which is now ascertained to be found in the warmer parts of Europe, and also in Asia, but is not an inhabitant of America, the *Ardea æquinoctialis*, with which it has been confounded, being a distinct species, and confined to that continent.

M. Temminck says that the Buff-backed Heron visits the mouths of the Danube, where an adult specimen has been killed; a young bird has been killed in the Crimea; it is said also to be found in Turkey and in Dalmatia. M. Hohenacker met with it in the Caucasian country. M. Temminck says it is common in India; in proof of which there are many instances. Mr. Gould mentions that it is plentiful in the Himalaya, and in Nepaul. Major Franklin includes it in the birds found in the mountain chain of Upper Hindoostan, and on the banks of the Ganges, where it is called the *Caboga* Heron, the term *Caboga* being a corruption of the Indian term *Gao-buga*, the Cow or Cattle Heron, in allusion to its being frequently seen amongst cattle. Colonel Sykes also includes it in his Birds of the Dukhun, where, he says, it is called Batty Bird by the Europeans, that it attends oxen while grazing, and picks insects from them. It is also *Le Crabier de la côte de Coromandel* of Buffon, Pl. Enl. 910, one of the very few figures of this species. M. Temminck says it is found in Japan. Dr. Horsfield includes it among his Birds of Java, under the name of *Ardea affinis*, and M. Temminck adds that it is found at Sunda and its islands.

Beyond what has been already stated, the habits, food, and nidification, are unknown.

M. Temminck's description of the adult bird is as follows: The head, occiput, cheeks, neck, and breast, orange colour, but the base of each feather is white; the orange-coloured ends formed of the loose unconnected filaments of the web; from the middle of the back another patch of feathers, the filaments of which are sufficiently elongated to reach beyond the ends of the closed wings; these feathers, as also those of the occiput, and others hanging from the bottom of the neck in front, are of a brilliant orange colour; all the rest of the plumage is of a shining white; the lore and irides are of a fine yellow colour, but the naked skin does not encircle the eye; the upper mandible is slightly curved; the beak yellow; the legs are yellow, but the joints and the toes are darker, and tinged with lead colour.

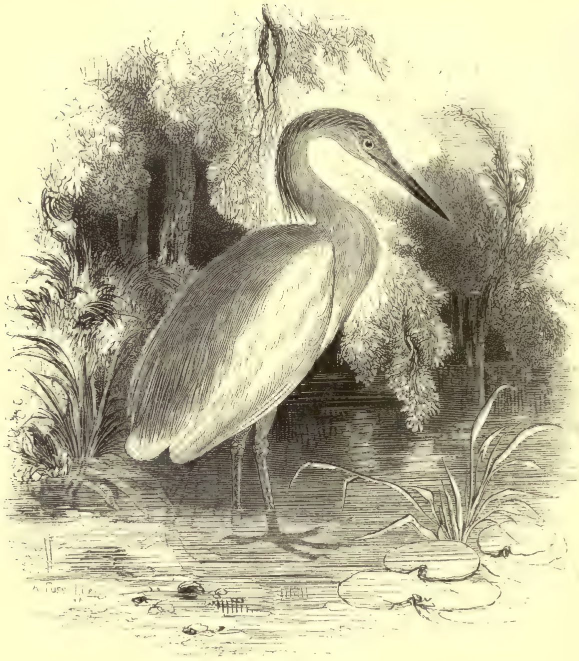
Males and females are alike in plumage.

The young specimen obtained by Montagu is thus described:—The length is about twenty inches; the bill two inches long to the feathers on the forehead, and of an orange yellow; the lore and orbits the same; irides pale yellow. The whole plumage is snowy white, except the crown of the head, and the upper part of the neck before, which are buff: legs three inches and a half long, and one inch and a half bare space above the joint; these parts are nearly black, with a tinge of green; the toes and claws are of the same colour; the middle claw pectinated.

The skin was of a very dark colour, almost black, so that on the cheeks and sides of the neck, where the feathers are thin, it is partly seen, or at least gives a dingy shade to the white plumage of those parts.

On the back of the head the feathers are a little elongated, but scarcely to be called a crest; on the lower part of the neck before, the feathers are more elongated, and though not slender, hang detached over the upper part of the breast: the tail when closed is in a slight degree forked, and so short as to be entirely covered by the wings when they are folded.

GRALLATORES. *ARDEIDÆ.*



THE SQUACCO HERON.

Ardea comata.

Ardea	*comata,*	*Squacco Heron,*	Penn. Brit. Zool. vol. ii. p. 26.
"	"	" "	Montagu, Suppl. to Ornith. Dict.
"	"	*Buff-coloured Egret,*	Bewick, Brit. Birds, vol. ii p. 25.
"	*ralloides,*	*Squacco Heron,*	Flem. Brit. An. p. 96.
"	"	" "	Selby, Brit. Ornith. vol. ii. p. 25.
"	"	" "	Jenyns, Brit. Vert. p. 189.
"	*comata,*	" "	Gould, Birds of Europe, pt. iii.
"	"	*Heron Crabier,*	Temm. Man. d'Ornith. vol. ii. p. 581.

This beautiful Heron has now been taken in Somersetshire, Cornwall, Devonshire, Hampshire, Wiltshire, Suffolk, Norfolk, Cambridgeshire, and Lincolnshire. In several of the counties named it has occurred more than once, and I am indebted to the Rev. E. L. Davis, of Halwell House, near Kingsbridge in Devonshire, for the knowledge of the occurrence of one that was shot in that neighbourhood so recently as the month of July last, 1840.

The native locality of this species appears to be along the south-western parts of Asia, in Egypt, and Nubia. It has been found in the countries bordering the Caspian Sea, in the Grecian Archipelago, in Turkey, and in Italy. The Zoological Society received a beautiful specimen from Sicily in June last. It is obtained occasionally at Genoa and Geneva, in Provence, in the middle of France, and in Germany; but, I believe, it has not been known to extend its migrations into more northern regions. It inhabits the banks of stagnant waters, morasses, the sides of rivers, and low lands near the sea-shore. One of the specimens obtained on the coast of Norfolk was caught alive, having entangled itself in some fishing nets hung on stakes to dry.

The Squacco Heron feeds on small fishes, mollusca, and insects, and is said to build on trees, but the eggs are unknown.

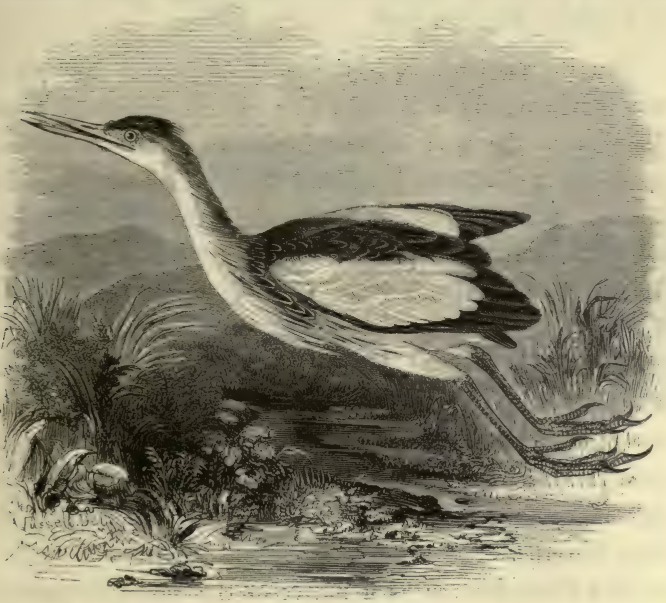
The adult bird has the beak greenish brown, darkest in colour towards the point; the lore naked and green; the irides bright yellow; the feathers on the top of the head pale yellow brown, streaked longitudinally with dark lines, the feathers becoming elongated towards the occiput, with a dark line along each outer edge; the feathers forming the occipital plume are eight or nine in number, and from four to six inches in length, lanceolate, pointed, pure white along the centre, bounded on each side with a black line, with a very narrow terminal margin of white; the sides, front of the neck at the bottom, and the back, rich buff colour; interscapulars reddish brown; the feathers of the back elongated; the webs disunited, each filament having the appearance of a single hair, from which circumstance the term *comata*,—hairy, has been applied to more than one species; the colour a pale reddish brown in those upon the surface, passing into a delicate buff colour in those underneath; the wings white, the ends of some of the coverts and tertials being tinged with buff; rump, upper tail-coverts and tail-feathers white; chin, throat, belly, under surface of the wings, the axillary plume, vent, and under surface of the tail-feathers, pure white; legs yellowish brown; toes brown above, yellow underneath; claws black.

Whole length from the point of the beak to the end of the tail, about nineteen inches. From the carpal joint to the end of the wing, nine inches: the first and third quill-feathers are equal in length, and only a very little shorter than the second, which is the longest in the wing.

The sexes in plumage resemble each other at the same age.

In a younger bird, the descending dusky grey streaks on the feathers of the neck are longer and broader, and the lighter ground colour more mixed with brown; the wing-coverts tinged with buff; but the plumage of the back, and the ends of the tertials are reddish brown; and I have observed that the younger the specimen the darker are the feathers along the middle line of the back.

I have just heard by a communication from Sir George Musgrave, to Mr. Jesse, that a specimen of the Squacco Heron was shot during the second week of the present month, July 1845, near Kirkoswald, a village on the Eden, Cumberland. The bird was observed in a meadow, close to the river.



THE LITTLE BITTERN.

Botaurus minutus.

Ardea minuta,	*Little Bittern Heron,*	Penn. Brit. Zool. vol. ii. p. 18.
” ”	*Little Bittern,*	Montagu, Ornith. Dict.
” ”	” ”	Bewick, Brit. Birds, vol. ii. p. 27, adult.
” ”	” ”	” ” ” ” ” 29, young.
” ”	” ”	Flem. Brit. An. p. 97.
Botaurus minutus,	” ”	Selby, Brit. Ornith. vol. ii. p. 36.
Ardea minuta,	” *Heron,*	Jenyns, Brit. Vert. p. 189.
Botaurus minutus,	” *Bittern,*	Gould, Birds of Europe, pt. x.
Ardea minuta,	*Heron Blongios,*	Temm. Man. d'Ornith. vol. ii. p. 584.

Botaurus. *Generic Characters.*—Beak as long, or rather longer, than the head, strong, higher than broad, the mandibles of equal length, upper mandible slightly curved downwards. Nostrils basal, linear, longitudinal, lodged in a furrow, and partly covered by a naked membrane. Legs of mean length; toes long and slender, all unequal, the middle toe as long as the tarsus; hind toe long, articulated with the interior toe, and on the same plane: claws long, that of the middle toe pectinated. Wing long, rather rounded, the first three quill-feathers the longest, and those nearly equal.

The Little Bittern is the smallest British example of the family to which it belongs, and will be perceived to differ from the true Herons in having little or no bare space above the tarsal joint, and that its toes are also much longer. M. Temminck does not admit the generic distinction of the Bitterns proper, but separates them from the Herons as a section. Pennant, who plainly saw that the Little Bittern possessed some of the characters of both Herons and Bitterns, called this bird the Little Bittern Heron. Some authors have originated a genus for the reception of the birds intermediate in character between the true Herons and the true Bitterns; I have, however, with Mr. Selby and Mr. Gould, included our bird among the true Bitterns.

The Little Bittern is a native of the southern parts of Europe, the south-western parts of Asia, and probably of a large portion of Africa, being found in Barbary, where Dr. Shawe says it is called Boo-onk (long-neck); it is found at Madeira, and as far south as the Cape of Good Hope, from whence specimens were brought by Dr. Andrew Smith.

In this country, the Little Bittern may be considered rather as a summer visiter, most of the recorded examples having been obtained between spring and autumn. The Rev. Richard Lubbock, however, sent me word that the specimen mentioned by Mr. Paget, in his sketch of the Natural History of Yarmouth, page 7, as in the collection of Mrs. J. Baker, is in immature plumage; was caught by a water-dog at Hickling, near Ludlam, during the extreme frost of 1822-3, and was given by himself to Mrs. Baker's brother, the late Mr. Girdlestone.

Some, if not prevented, would probably have bred in this country. Montagu, in his Supplement, says, "A female of this rare species was shot contiguous to the river Credey, in Devonshire, in the month of May 1808. It was only wounded in the wing, and was kept alive for two days; and it was observed to sit with its neck contracted like the Common Heron, but with the bill pointing upwards. Upon dissection, about forty eggs were counted in the ovaries, some of which were so considerably enlarged, as to induce an opinion that a brood would have been produced in this country, especially as a male was afterwards shot not very distant, and had been previously seen near the same place. A third was also killed in the same neighbourhood during that summer.

Early in September 1839, Mr. Heysham of Carlisle, sent me word that about two months previous to the date of his letter, a beautiful pair of adult Little Bitterns were shot at or near South Waltham, where it was supposed they had a nest; and in the summer of 1826, a young specimen of the Little Bittern was shot on the banks of the Thames, near Windsor; it was believed to have been bred there from the situation being favourable, and the circumstance of a second bird in the same state of plumage being seen about the same spot for several days at that time.

The Little Bittern inhabits marshes by the sides of rivers, plantations of osiers, and other moist situations in which reeds and aquatic herbage grow luxuriantly. They feed upon the fry of fish, frogs, and other small reptiles, mollusca and insects. The note of the male, M. Vieillot says, resembles the barking of a large dog, when heard at a distance. The nest is formed upon the ground of flag-leaves and bits of grass, the nest itself being attached to upright growing reeds. The female lays four or five eggs, one inch five lines in length, by one inch and half a line in breadth, of a uniform dull white.

So many examples of the Little Bittern have now been taken in various parts of this country, that a brief enumeration only will be necessary. Montagu mentions that one was shot from the stump of a tree on the bank of the Avon, near Bath; and H. E. Strickland, Esq. sent me notice of one that was shot in the spring of 1838, at Shobden Court, in Herefordshire; and this bird has also been killed in Shropshire, and in South Wales. It has been killed in Cornwall, and several times in Devonshire. One has been recorded as having been killed at Lytchet, in Dorsetshire, and one is also recorded to have been killed near Christchurch in Hampshire. Berkshire has been named as producing one; and a specimen in my own collection was killed some years since on Uxbridge Moor in Middlesex. In Norfolk several specimens have been obtained. The figure at the head of this subject was drawn from a very fine specimen in the collection of Dr. Thackeray, at King's College, Cambridge; a specimen has been killed in Yorkshire, another at the mouth of the Tyne, and another in Northumberland, now in the collection which belonged to the late Sir M. W. Ridley, Bart. From this last-mentioned bird Bewick's figure of the adult Little Bittern was taken. Dr. Fleming mentions one that was shot at Sanda, in Orkney; and Mr. William Thompson, in his recorded notes of the birds of Ireland, mentions that a Little Bittern, shot in the county of Armagh, is preserved in the cabinet of William Sinclair, Esq. of Belfast. Specimens have also been obtained in the east and south of Ireland.

The Little Bittern has been killed as far north as Sweden. It occurs occasionally in Germany, is rather common in Holland, and is found in France, Provence, and Italy. It is seen at Genoa on its passage northward; and M. Necker says that it is annually observed in Switzerland, where some few stop to breed. It is observed every year between spring and autumn, at Corfu, Sicily, Malta, and Crete. The specimen from which Edwards drew the figure in his Gleanings came from Aleppo; it inhabits Arabia, and M. Hohenacker, the Russian naturalist, includes the Little Bittern among the birds found in the countries of the Caucasus, between the Black and the Caspian Seas.

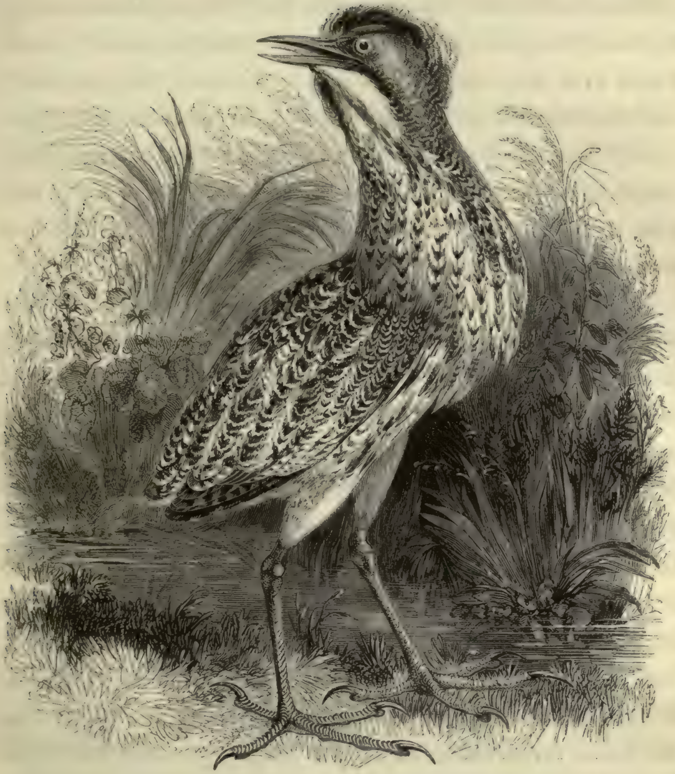
In the adult bird, the beak, lore, and irides, are yellow; the top of the head, the occiput, the shoulders, the wing-primaries, and the tail-feathers, are of a shining bluish black; all the wing-coverts buff-coloured; the cheeks and sides of the neck, throughout its whole length, buff; the back of the neck is almost bare in the Bitterns, but the feathers of the sides of the neck passing obliquely backwards and downwards hide the almost naked space; the chin and the neck in front white, partially tinged with buff; the feathers at the bottom of the neck in front are elongated, but the Bitterns have no true occipital plume, or elongated feathers, on the back, like the Herons; on the lower part of the neck on each side, just in advance of the carpal joint of the wing, when the wing is closed, a few of the feathers have dark centres with buff-coloured margins; breast, belly, thighs, and under tail-coverts, buff, with a small patch of white about the vent; under wing-coverts and the axillary plume pale buff; the legs, toes, and claws greenish yellow.

Males and females, when adult, are alike in plumage.

The whole length about thirteen inches. From the carpal joint to the end of the wing, five inches and three-quarters; the first three quill-feathers very nearly equal in length, and the longest in the wing.

A young bird in its first plumage, but with some down still remaining upon it, has the top of the head of dark brown; the feathers of the neck white at the base, pale yellow brown towards the end, with a streak of dark brown in the line of the shaft; the feathers of the back dark brown, with buff-coloured edges; the wing-primaries and tail-feathers greyish black; the outer web of the first quill-feather chestnut; the carpal surface of the wing and the tertials reddish brown; the wing-coverts buff; breast pale buff, with long streaks of dusky brown in the line of the feather; thighs in front pale buff, without streaks, but varied with brown streaks behind; vent, under tail-coverts, and under wing-coverts, pale buffy white; legs, toes, and claws, reddish brown.

The dark-coloured streaks on the neck and breast, and the broad light-coloured margins of the feathers on the upper surface of the body are lost by degrees.



THE COMMON BITTERN.

Botaurus stellaris.

Ardea stellaris,	*Bittern Heron,*	Penn. Brit. Zool. vol. ii. p. 14.
,, ,,	*The Bittern,*	Montagu, Ornith. Dict.
,, ,,	,, ,,	Bewick, Brit. Birds, vol. ii. p. 24.
,, ,,	,, ,,	Flem. Brit. An. p. 95.
Botaurus ,,	*Common*	Selby, Brit. Ornith. vol. ii. p. 30.
Ardea ,,	,, ,,	Jenyns, Brit. Vert. p. 190.
Botaurus ,,	,, ,,	Gould, Birds of Europe, pt. xviii.
Ardea ,,	*Héron Grand Butor,*	Temm. Man. d'Ornith. vol. ii. p. 580.

Formerly, as Mr. Gould observes, when large portions of the British islands were uncultivated, and extensive marshes and waste land afforded the Bittern abundance of retreats congenial to its habits, it was plentifully distributed over the country; but as cultivation has extended, and the marshes have been drained, its numbers have gradually decreased, and although not absolutely a rare bird, its presence is not always to be reckoned upon, for in one year it may be tolerably common, and then for several succeeding seasons scarcely to be procured at all.

In proof of the correctness of these remarks, Mr. Selby observes that at the present day the capture of a Bittern is, in many parts of England, a subject of great interest; yet in the winter of 1830-31, he was credibly informed that no less than ten were exposed for sale in one morning at Bath. Mr. Allis of York sent me word some time ago that in the winter of 1837, a bird-preserver in that city had a dozen Bitterns through his hands in a comparatively short space of time; and Mr. Heysham of Carlisle has recorded that during the month of December 1831, and those of January and February 1832, no less than eight specimens of the Bittern were killed in that part of Cumberland, which was the more remarkable, as only a single specimen had been met with in the same district for ten or twelve years previous.

I am able to refer to only three recent records of the breeding of the Bittern in this country. Mr. Eyton, in his Fauna of Shropshire, says, a hatch of these birds came off at Cosford Pool, near Nufnal, in 1836, and during the same summer, and in the same county, a pair of Bitterns bred at Tonglake, Albrighton, in a reedy pond of half an acre, surrounded by bushes, about half a mile from the Holyhead road; two young birds about half grown, were caught by a farmer's boy. The authors of the catalogue of Norfolk and Suffolk Birds, published in the fifteenth volume of the Transactions of the Linnean Society, mention, that they had once obtained an egg of this bird in the marshes of Norfolk.

Mr. Lubbock, in his Fauna of Norfolk, mentions several instances of the young of the Bittern taken in Norfolk; and Mr. W. R. Fisher has given me a drawing of one taken at Ranworth, by Mr. D. B. Preston, with an addled egg.

The Bittern constantly feeding at night, is therefore seldom seen on wing in the day, but remains, with head erect, in thick beds of reeds, or conceals itself among flags, rushes, or other rank aquatic vegetation, which afford it a solitary and secure retreat; from such situations it is with difficulty made to take flight, and when at length obliged to get on wing, the pace is dull and flagging, and seldom sustained to any great distance. M. Vieillot says, that in France it is occasionally found in woods. In the spring, and during the breeding-season, the Bittern makes a loud booming or bellowing noise, whence, probably, the generic term *Botaurus* was selected for it; but when roused at other times, the bird makes a sharp, harsh cry on rising, not unlike that of a Wild Goose. Specimens are not unfrequently shot from some of the numerous beds of reeds growing by the sides of the Thames on the shores of Kent and Essex. When on the ground wounded, the Bittern will strike at dog or man; and some care is necessary when about to handle one, to avoid a hard blow from the point of its sharp beak. If a dog advances upon one that is not entirely disabled, the bird throws itself on its back, like a Hawk, and fights with its claws as well as with its beak. Mr. Maxwell, in his Wild Sports of the West of Ireland, describing the sport enjoyed by a friend and himself while shooting over a fen in Ireland, says, "Out of seventy head, we reckoned one Woodcock, and a brace of old Grouse that we found among the heathy banks bordering the fen. We shot six couple of Teal; and, with one exception, the remainder of the count were Snipes, of which at least a fourth were jacks. In the most impassable section of the morass, old York pointed with more than customary steadiness; and, it might be fancy, actually looked round with peculiar expression, as if he would intimate that no common customer was before him. I got within twenty yards, and encouraged the old setter to go in; but he turned his grizzled and intelligent eyes to mine, and wagged his tail as if he would have said, 'Lord! you don't know what I have here.' A tuft of earth flung by one of the aides-de-camp obliged the skulker to get up, and to our general surprise, a fine Bittern rose. I knocked him over; but though he came down with a broken wing and wounded leg, he kept the old dog at bay until my companion floundered through the swamp and secured him. On this exploit I plumed myself, for Bitterns are here extremely scarce, and in Ballycroy they are seldom heard or found."

The Bittern was formerly in some estimation as an article of food for the table: the flesh is said to resemble that of the leveret in colour and taste, with some of the flavour of wild fowl. Sir Thomas Browne says that young Bitterns were considered a better dish than young Herons.

Mr. Selby says the nest is composed of sticks, reeds, &c. and is generally placed on the ground near the water's edge, among the thickest herbage; the eggs are four or five in number, of a uniform pale brown colour. The young are produced in about twenty-five days; they are fed by the parents until fully fledged, and do not quit the nest till they are nearly able to provide for themselves. The eggs are of uniform shape at both ends; two inches two lines in length, by one inch six lines in breadth.

In the choice of its food the Bittern is not very particular, feeding on small mammalia, small birds and fishes, warty lizards and frogs, which are usually swallowed whole. Sir William Jardine has mentioned that he once took a whole Water Rail out of the stomach of a Bittern. In the stomach of one examined by myself in January 1826, I found the bones of a pike of considerable size, and the stomach of another examined in February 1820, contained a Water Rail whole, and six small fishes. In the stomachs of two examined by Mr. Blyth, two dace, the remains of other fish, and some large coleopterous insects were found.

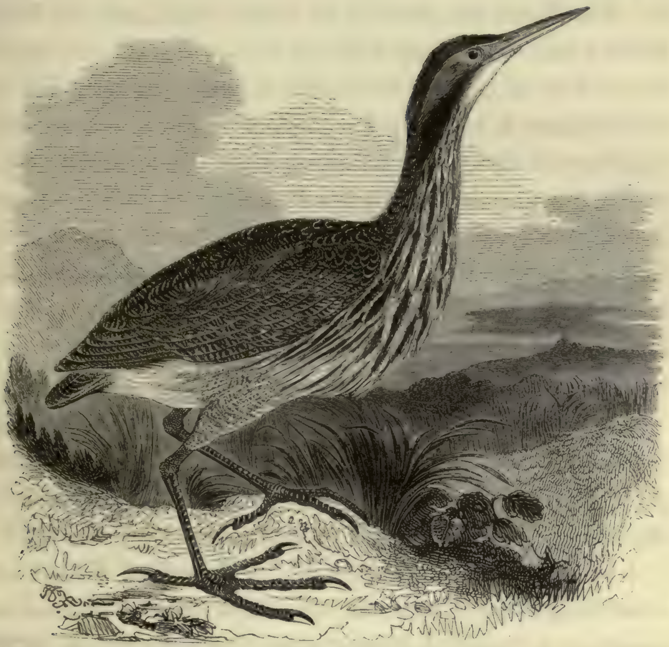
The specimen from which the representation of the Bittern here given was taken, was killed some years ago in Denny Bog, in the New Forest, and the bird was sent me by my friend Major Gilbert of Bartley, near Lyndhurst. Mr. Anderson says, that Manton Common and Twigmoor, near Brigg, were favourite localities for the Bittern in Lincolnshire. It is sometimes killed in Scotland. Mr. Thompson says some few breed in the most extensive bogs in Ireland, and are occasionally met with elsewhere, but becoming gradually more scarce.

The Bittern visits Denmark, and Scandinavia generally, during summer; and, according to Pennant, is found in Russia and in Siberia, as far north as the river Lena. Southward the Bittern is found generally over the European continent, inhabiting Spain, Provence, and Italy. It is found at Corfu, and is resident in Sicily all the year. Visits Malta in its passage to Tunis. It is found in Barbary; and Dr. A. Smith brought specimens from South Africa. The Zoological Society have received specimens sent by Keith Abbott, Esq. from Trebizond, and the Russian naturalists, who went with the expedition to the Caucasian range of mountains, found the Bittern inhabiting the countries between the Black and the Caspian Seas. It is found in the north western part of India, at Bengal, and in China. Colonel Sykes says it is rare in the Dukhun; but that the species is identical with the European bird; and M. Temminck includes our Bittern in his Catalogue of the Birds of Japan.

The beak is greenish yellow, the upper mandible varied with dark horn colour towards the point; the lore green; the irides yellow; the top of the head black, tinged with bronze green; the occipital feathers varied with transverse bars of black and pale buff; all the upper surface of the body pale brownish buff, irregularly marked with black and dark reddish brown; the primary quill-feathers mottled with greyish black and chestnut colour; tail-feathers reddish brown, varied with black; the cheeks buff; the sides of the neck the same, but with narrow transverse lines of dark brown; chin pale buffy white; from the angles of the mouth, and down the neck in front, are large longitudinal streaks of dark brown and reddish brown; the feathers of the breast blackish brown in the centre, with broad margins of buff; under surface of the body buff, with narrow streaks of dark brown; legs and feet grass green; claws pale horn colour, the middle claw pectinated.

Whole length of an adult bird from twenty-eight to thirty inches. From the carpal joint to the end of the wing, fourteen inches; the first four quill-feathers nearly equal in length, and the longest in the wing.

Neither the females nor the young of the year differ essentially from the males in their plumage.



THE AMERICAN BITTERN.

Botaurus lentiginosus.

Ardea lentiginosa,	*Freckled Heron,*	MONTAGU, Suppl. Ornith. Dict.
” ”	” ”	BEWICK, Brit. Birds, vol. ii. p. 23.
Botaurus Mokoho,	*American Bittern,*	SELBY, Brit. Ornith. vol. ii. p. 34.
Ardea lentiginosa,	” ”	JENYNS, Brit. Vert. p. 191.
Botaurus lentiginosus,	” ”	GOULD, Birds of Europe, pt. xx.
Ardea lentiginosa.	*Héron lentigineux,*	TEMM. Man. d'Ornith. pt. iv. p. 381.

THE bird from which Colonel Montagu's description and figure were taken was shot by Mr. Cunningham, in the parish of Piddletown, in Dorsetshire, in the autumn of 1804.

Mr. Cunningham stated, that when in pursuit of some Pheasants, among the high banks, between the broad ditches of some rich water meadows, about half a mile distant from the river Froome, this bird rose, and he shot it. The flight was said to be rather rapid, and the bird made a noise something like the tap on a drum, which induced him to believe it was the Common Bittern, and as such he sent it to Colonel George of Penryn, in Cornwall, who was at that time making a collection of birds. The specimen was quite fresh when it arrived at Penryn, where it was preserved; but the sex was not noted. When Colonel George disposed of his collection, this bird was bought for Colonel Montagu, and was afterwards, with his other birds, transferred to the British Museum, where this example is still preserved.

Dr. Edward Moore, in his Catalogue of the Wading Birds of Devonshire,* besides referring to Montagu's bird, says, "I have been so fortunate as to obtain a specimen, shot at Mothecombe, near Plymouth, December 22, 1829."

I am indebted to the Rev. H. D. Fussell of Ellingham, near Ringwood, Hants, for the knowledge of the occurrence of a Freckled Heron, near Christchurch, in 1836. This gentleman obtained for me a description of this specimen from Mr. William Mott, of Christchurch, who preserved the bird, which is now in the collection of Mr. Sloman, in that neighbourhood.

From Mr. J. R. Wallace, of Douglas, in the Isle of Mann, who possesses a considerable collection of preserved birds, and other subjects in Natural History, I have also received a letter, stating that a bird, which was believed to be the Freckled Heron of Montagu, had been killed on that island very recently.

At the end of October 1844, Sir William Jardine sent me word that a specimen of the American Bittern had been killed on the moor near his residence in Dumfriesshire, during the preceding week, and was preserved in his collection. Mr. Gould was on a visit at Jardine Hall at the time. This is probably the first example shot in Scotland.

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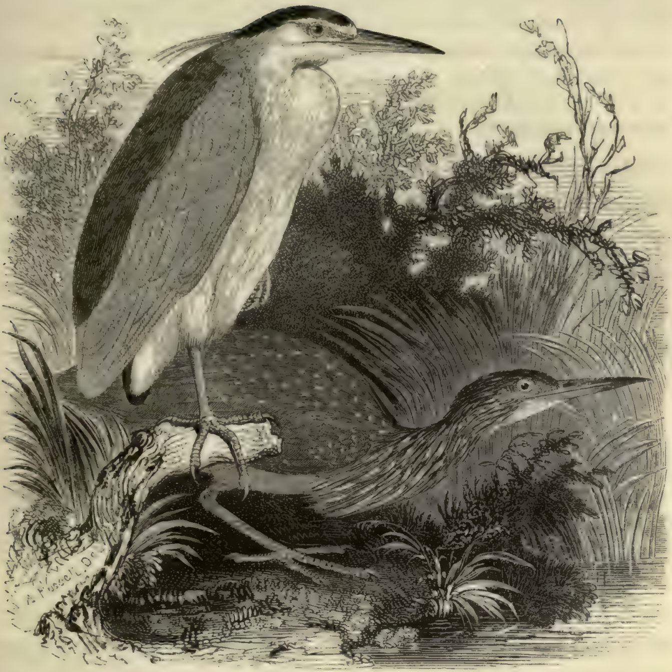
* Magazine of Natural History, vol. x. p. 320.

This species is well known to American Naturalists, and is found at different seasons of the year from Hudson's Bay to Carolina. It has various names in different states; such as Indian Pullet, Indian Hen, and Dunkadoo,—a word, says Wilson, probably imitative of its common note. In the markets of New Orleans, Mr. Audubon tells us, it is bought in autumn by the poorer classes to make gombo soup. In its habits and in its voice, it bears considerable resemblance to our Common Bittern. It makes its nest in swamps, laying four cinereous green eggs, according to Hutchins, among the long grass. The young are said to be at first black. Mr. Audubon says the egg of this bird measures two inches in length, by one inch and a half, and is of a broadly oval shape, rather pointed at the smaller end, and of a uniform dull olivaceous tint. Wilson says also of this American Bittern, that the bird when fat is considered by many to be excellent eating. The stomach is usually filled with fish and frogs. Dr. Richardson says, "It is a common bird in the marshes and willow thickets of the interior of the fur-countries up to the 58th parallel. Its loud booming, exactly resembling that of the Common Bittern of Europe, may be heard every summer evening, and also frequently in the day. When disturbed, it utters a hollow, croaking cry." The term *mokoho*, applied to this species by Vieillot, Wagler, and others, has reference probably to the name by which this bird is known among the Cree Indians. The specimen from which Edwards drew the representation given in his Gleanings, plate 136, came from Hudson's Bay.

The beak is brownish yellow; the upper mandible dark brown along the upper ridge, and at the point: the lore green; the irides yellow; crown of the head brown, tinged with red; from the forehead, before, over, and behind the eye, a streak of light yellow brown; occiput and nape brown; all the back of the neck below the nape bare; inter-scapulars, back, scapulars, and wing-coverts, rich brown, the centre of each feather the darkest and most uniform in colour, the edges freckled with the darker brown on a ground of yellow brown; all the primaries except the first three and all the secondaries brownish black, tipped with chestnut, which is also freckled with brownish black; all the shafts black; tertials freckled dark brown, red brown, and buff; upper tail-coverts buff, freckled with two shades of brown; tail-feathers almost uniform reddish brown; chin and front of the neck a mixture of white, buff, and dark brown in streaks; ear-coverts, and a line descending therefrom, yellow brown: between this and the throat in front an elongated descending streak of black; the loose elongated feathers of the front and sides of the neck down to the breast, are brown along the centre, bounded by a darker line, and with broad edges of pale buff: breast and belly buff, each feather with an elongated brown central patch; vent and under tail-coverts uniform buff; legs and toes greenish brown; the claws darker; the middle claw pectinated.

Whole length about twenty-seven inches. From the carpal joint to the end of the wing eleven inches and a half: the first three quill-feathers nearly equal in length, and the longest in the wing; the first quill-feather differs in form from the second and third, being remarkably pointed at the end, while the second and third are rounded.



THE NIGHT HERON.

Nycticorax Gardeni.

Ardea nycticorax,	*Night Heron*,	PENN. Brit. Zool. vol. ii. p. 23, adult.
,, *Gardeni*,	*Gardenian Heron*,	,, ,, ,, p. 27, young.
,, ,,	,, ,,	MONTAGU, Ornith. Dict. young.
,, *nycticorax*,	*Night* ,,	,, ,, ,, adult.
,, ,,	,, ,,	BEWICK, Brit. Birds, vol. ii. p. 13.
,, ,,	,, ,,	FLEM. Brit. An. p. 96.
Nycticorax Europæus,	*Common Night Heron*,	SELBY, Brit. Ornith. vol. ii. p. 39.
Ardea nycticorax,	,, ,, ,,	JENYNS, Brit. Vert. p. 191.
Nycticorax Europæus,	,, ,, ,,	GOULD, Birds of Europe, pt. xvi.
Ardea nycticorax,	*Bihoreau à manteau noir*,	TEMM. Man. d'Ornith. vol. ii. p. 577.
Nycticorax ardeola,	,, ,, ,,	TEMM. Man. d'Ornith. pt. iv. p. 384.

NYCTICORAX. *Generic Characters.*—Beak about the same length as the head, bulky, strong, broad and dilated at the base; upper mandible slightly bending and curved at the point; under mandible straight. Nostrils longitudinal, lateral, but little in advance of the base of the beak, naked, placed in a groove, and partly covered by a naked membrane; lore and orbits naked. Legs of moderate length, naked for a short distance above the tarsal joint; tarsus longer than the middle toe; the outer and middle toe united by a membrane; claws short, that of the middle toe pectinated.

ACCORDING to Pennant, the first specimen of the Night Heron killed in England was shot near London in May 1782, since which more than a dozen examples have been killed and recorded in various counties of England; it has been obtained twice in Ireland, and twice, if not more, in Scotland.

The Night Heron has an extensive geographical range, being found in Europe, Africa, and Asia; it is most numerous in the warmer parts of each, and does not go to the very cold or high latitudes on either of the continents of the Northern hemisphere. It inhabits marshes, fens, and the margins of lakes or rivers, which are thickly grown over with reeds or bushes. These birds are nocturnal in their habits, secreting themselves by day among the reeds, flags, rushes, or other rank vegetation of morasses, and take wing on the approach of evening, with harsh disagreeable notes, to visit their feeding-ground. They seek small reptiles, fishes, and aquatic insects, which are swallowed whole. They build on trees, and lay four pale greenish blue eggs, rather more than two inches in length by one inch and a half in breadth. The young bird is brown, with elongated yellowish white spots, as shown in the wood-engraving at the head of this subject. From the great difference in colour when compared with the adult Night Heron, the young bird was considered as a different species, and named *Ardea Gardeni*, and Gardenian Heron, and was called by Dr. Latham the Spotted Heron. Gmelin conferred a service in suggesting the scientific name of *Nycticorax Gardeni* for the Night Heron, as it had the effect of uniting two birds, parent and offspring, which had previously been considered as two distinct species. The Zoological Society are seldom without living specimens of this bird in different states of plumage: and in January 1834, as will be seen by the printed Proceedings of the Society for that year, page 27, three examples were exhibited at the evening meeting, one of which supplied the interesting link in this species, being a young bird which united in its plumage the brown spotted wing of the Gardenian Heron, with the black head and ash-coloured back of the Night Heron: thus exhibiting the change from the young to the adult bird.

The Night Heron has been killed in Sussex, Dorsetshire, Devonshire, Flintshire, Anglesey, and in Ireland. In the inland counties of Buckinghamshire, Bedfordshire, and Oxfordshire, and on the eastern side of our island in Kent, Suffolk, Norfolk, and twice in Scotland. Since the publication of the first edition of this work, a fine male was shot at Radipole near Weymouth, as I learn by a communication from George Frampton, Esq. "A pair, probably male and female, had been observed flying about and pitching on the trees in that village."

Another was shot in April 1844, in the fish-pond of the Rev. J. C. Crowley, at St. John's, Cornwall, as recorded in the Zoologist, vol. ii. page 575.

Specimens have been obtained in France, Spain, Portugal, Provence, and Italy. Adult specimens of the Night Heron are seen in spring at Candia, Malta, Sicily, and Corfu. In autumn they are seen on their return to Africa, with their young birds of the year.

The Zoological Society have received specimens from

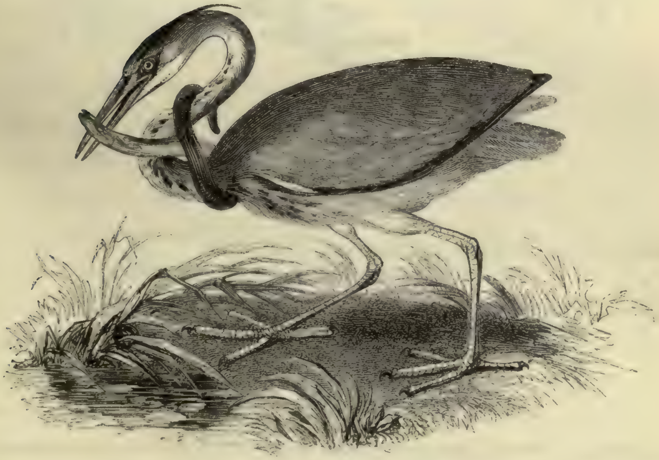
Erzeroom, and M. Menetries found it near the Caspian Sea. It has also been brought by different naturalists from the Cape of Good Hope. It inhabits Nepal, and the country about Calcutta, and is found in China, and Japan.

The adult Night Heron has the beak nearly black above and at the point; the base of the lower mandible and the naked skin around the eyes, green; the irides crimson: the top of the head and the back of the neck black; the elongated occipital plumes white, and generally three in number, but in very old birds it is said that the number is greater; scapulars, inter-scapulars, and back, nearly black, glossed with green; wings, wing-coverts, all the quill-feathers, secondaries, tertials, and tail-feathers, ash grey; throat and neck almost white, passing into dull greyish white on the sides; breast, belly, thighs, flanks, and under tail-coverts, nearly pure white; legs and toes yellowish green; the claws black.

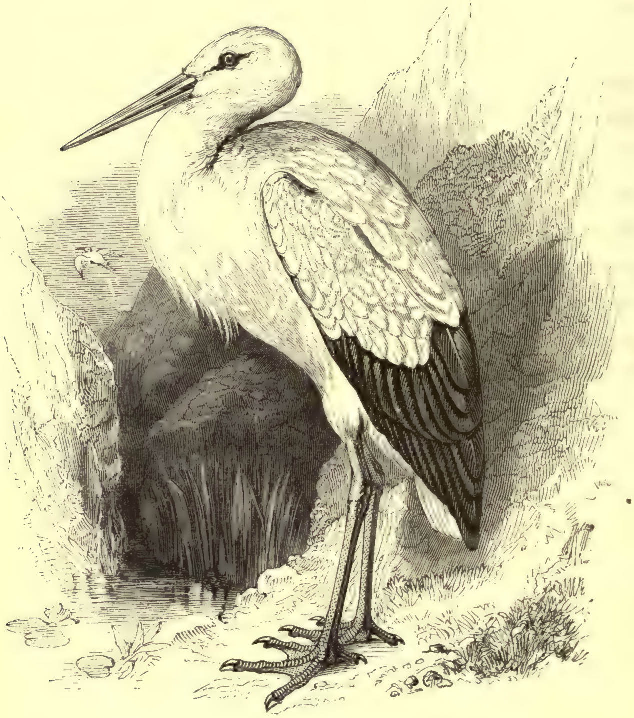
Adult males and females differ but little in colour. The whole length, from the point of the beak to the end of the tail, about twenty-three inches: from the carpal joint to the end of the wing twelve inches; the first and fourth quill-feathers equal in length, and a little shorter than the third feather; the second feather the longest in the wing.

The young Night Heron has the upper mandible of the beak of a dark brown, the edge on each side lighter in colour, and, like the under mandible and the naked skin around the eye, of a pale greenish brown; the irides brown; no elongated occipital plumes; the top of the head, back of the neck, inter-scapulars, shoulders, wing, and wing-coverts, clove brown, the centre of each feather being pale wood-brown, extending to the tip, but bounded on the sides with darker brown; all the primaries, secondaries, and tertials, clove brown, tipped with pale wood-brown; rump, and upper tail-coverts, a mixture of ash grey, pale brown, and clove brown; tail-feathers greyish brown; chin, throat, neck in front, breast, and under surface of the body, dull white, with elongated patches of greyish brown; legs and toes brown, tinged with green, claws dark brown.

I am indebted to the kindness of the Rev. W. Alderson, of Ashton, near Sheffield, for the use of a clever drawing, from which the vignette below was taken. A Heron was seen one evening going to a piece of water to feed; the spot was visited the next morning, when it was discovered, that the Heron had struck its sharp beak through the head of an eel, piercing both eyes; the eel thus held had coiled itself so tightly round the neck of the Heron, as to stop the bird's respiration, and both were dead.



GRALLATORES. *ARDEIDÆ.*



THE WHITE STORK.

Ciconia alba.

Ardea ciconia,	*White Stork,*	Montagu, Ornith. Dict.
" "	*The* "	Bewick. Brit. Birds, vol. ii. p. 5.
Ciconia alba,	*White* "	Flem. Brit. An. p. 97.
" "	" "	Selby, Brit. Ornith. vol. ii. p. 45.
" "	" "	Jenyns, Brit. Vert. p. 192.
" "	" "	Gould, Birds of Europe, pt. vi.
" "	*Cigogne blanche,*	Temm. Man. d'Ornith. vol. ii. p. 560.

Ciconia. *Generic Characters.*—Beak longer than the head, straight, strong, and pointed. Nostrils pierced longitudinally in the horny substance. Eyes surrounded by a naked skin. Legs long; feet with four toes, three in front, united by a membrane as far as the first joint. Wings rather large; the first quill-feather shorter than the second; the third and fourth quill-feathers the longest in the wing.

In the days of Merrett, Willughby, and Ray, the White Stork was considered a very rare visiter to this country. Dr. Turner even mentions that he had only seen it in confinement; but Sir Thomas Browne, writing at Norwich, says I have seen this bird in the fens, and some have been shot in the marshes between this and Yarmouth. Bewick says that Wallis, in his History of Northumberland, mentions one which was killed near Chollerford Bridge, in the year 1766. Its skin was nailed up against the wall of the inn at that place, and drew crowds of people from the adjacent parts to view it. The winter-quarters of the White Stork are the northern parts of Africa, and more particularly Egypt, from whence it migrates in March or April to France, Holland, Germany, Poland, and Russia. Others, taking a more westerly direction, visit Sweden, and even gain a high northern latitude in Scandinavia, returning southward early in August. It is common in Spain and Turkey.

This species is said to have been killed in Ireland. Dr. Edward Moore on the authority of Mr. Gosling, says, that three birds have been obtained in Devonshire within the last fifteen years. One was killed in Hampshire in 1808 by the gamekeeper of John Guitton, Esq., of Little Park, near Wickham. One has been killed near Salisbury. Two have been killed in Kent; one of them in Romney Marsh, the second near Sandwich. One was killed near Mildenhall, in Suffolk, in 1830. Three have been killed in Norfolk, the last in 1817. I learn from Frederick Holme, Esq., that a flock of four or five White Storks haunted the pools of Kedby Common in the East Riding of Yorkshire, for some time in the spring of 1830, and one of them was shot. One specimen has been killed in Scotland, communicated to me by Thomas M. Grant, Esq., and two examples are said to have been killed in Shetland.

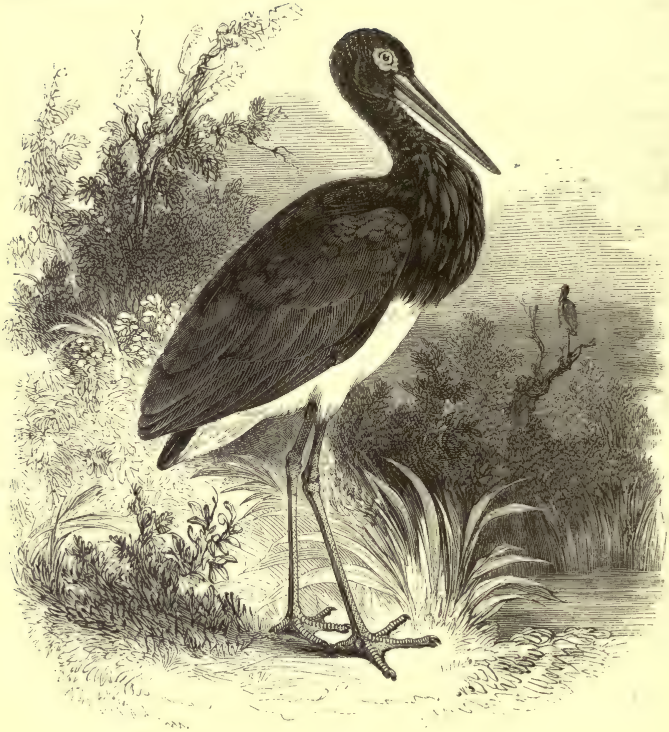
W. R. Fisher, Esq., sent me word that a White Stork was shot at Halvergate, seven miles from Yarmouth in May 1842; and Thomas Thornhill, Esq., favoured me with a notice of one killed in Essex during the same month.

"The White Stork, from its familiarity, and the services which it renders to man in some countries by the destruction of reptiles and the removal of offal, has ever secured for itself an especial protection, and an exemption from the persecution which is the lot of the less favoured of the feathered tribes. Its periodical return to its accustomed summer-quarters to its nest, the home of many generations, has ever been regarded with feelings of pleasure; and its visits to the habitations of man have not only been permitted, but sanctioned with welcome. In various parts of Holland, the nest of this bird, built on the chimney top, remains undisturbed for many succeeding years, and the owners constantly return with unerring sagacity to the well-known spot. The joy which they manifest on again taking possession of their deserted dwelling, and the attachment which they testify towards their benevolent hosts, are familiar in the mouths of every one." In Holland particularly, in some parts of Germany, and indeed in all countries where it breeds it is protected; boxes are provided for them on the tops of the houses; and in several continental cities, he considers himself a fortunate man whose roof the Stork selects for its periodical resting-place. Its nest, formed of a mass of sticks, and other coarse materials, is on some part of the house top, or a tall chimney, a steeple, or an old tower, and sometimes on the summits of the loftiest trees in the immediate neighbourhood of the most frequented place. It stalks about in perfect confidence along the busy streets and markets of the most crowded towns, and seeks its food on the banks of rivers, or in fens, in the vicinity of its abode. Storks devour indiscriminately small mammalia, reptiles, fishes, the young of water-fowl, aquatic insects, and worms. The Stork generally lays three or four eggs, which are white, slightly tinged with buff colour, of a short oval form, about two inches ten lines in length, by one inch eleven lines in breadth. After a month's incubation, Mr. Selby says, the young are hatched, and, with great care, attended and watched alternately by the parents until fully fledged and able to provide for themselves. The old birds feed their young by inserting their own beak within the mandibles of the young bird, and passing from their own stomach the half digested remains of their last meal.

Their affection for their young, as observed by Mr. Bennett, is one of the most remarkable traits in their character: it is only necessary to mention the history of the female, which, at the conflagration of Delft, after repeated and unsuccessful attempts to carry off her young, chose rather to remain and perish with them in the general ruin, than to leave them to their fate.

The adult bird has the beak red; the bare skin around the eye black; the irides brown; the whole of the plumage white, except the greater wing-coverts, the primary quill-feathers, secondaries, and tertials, which are black; legs and toes red; the claws brown. The whole length three feet six or eight inches. From the carpal joint to the end of the primaries, twenty-three inches. Young birds have the quill-feathers dull black; the beak and legs dark brownish red.

GRALLATORES. *ARDEIDÆ.*



THE BLACK STORK.

Ciconia nigra.

Ardea	*nigra,*	*Black*	*Stork,*	MONTAGU, Linn. Trans. vol. xii. p. 19.
Ciconia	„	„	„	FLEM. Brit. An. p. 97.
„	„	„	„	SELBY, Brit. Ornith. vol. ii. p. 48.
„	„	„	„	JENYNS, Brit. Vert. p. 193.
„	„	„	„	GOULD, Birds of Europe, pt. vi.
„	„	„	„	EYTON, Rare Brit. Birds, p. 33.
„	„	*Cigogne noir,*		TEMM. Man. d'Ornith. vol. ii. p. 561.

THE first occurrence of the Black Stork in a wild state in this country, was made known by Colonel Montagu in a paper read before the Linnean Society on the 2nd of May, 1815; and I am not aware that more than three other examples of this bird have occurred since. The first of these three was shot on the Tamar in November 1831, and the circumstance has been recorded by Dr. E. Moore in Devonshire, and by Mr. Couch in Cornwall. Dr. Moore saw this bird while warm, and it is now in the collection of Mr. Drew. The second is recorded in the seventh volume of the Magazine of Natural History, page 53: it was shot in October 1832, in the parish of Otley, about eight miles from Ipswich. The third is of still more recent date. In reference to this bird, I received two communications on the same day: one from the Earl of Malmesbury, who had purchased the specimen for his own collection at Heron Court, near Christchurch, and to whom I have the honour to acknowledge my obligations for various interesting particulars of British Birds: the other from my friend, William Thompson of Lytchet, near Poole, but a short distance across the water from the spot where the bird was obtained. This Black Stork was shot in the Isle of Purbeck by a clay-boat man in a marshy field on the banks of the Middleburg creek, at the south side of Poole Harbour, on Friday the 22nd of November, 1839.

Colonel Montagu's bird was captured by means of a slight shot wound in the wing, which did not break the bone, and the bird lived in his possession more than twelve months, in excellent health. It was shot in West Sedge Moor, adjoining the Parish of Stoke St. Gregory, Somersetshire, on the 13th of May, 1814; and what is remarkable, another very rare bird, the White Spoonbill, was shot on the same moor, by the same person, in November of the preceding year.

The habits of Colonel Montagu's bird in confinement are thus related in the communication to the Linnean Society that has already been referred to.

Like the White Stork, it frequently rests upon one leg; and if alarmed, particularly by the approach of a dog, it makes a considerable noise by reiterated snapping of the bill, similar to that species. It soon became docile, and would follow its feeder for a favourite morsel,—an eel. When very hungry it crouches, resting the whole length of the legs upon the ground, and supplicantly seems to solicit food by nodding the head, flapping its unwieldy pinions, and forcibly blowing the air from the lungs with audible expirations. Whenever it is approached, the expulsion of air, accompanied by repeated nodding of the head is provoked. The bird is of a mild and peaceful disposition, very unlike many of its congeners; for it never makes use of its formidable bill offensively against any of the companions of its prison, and even submits peaceably to be taken up without much struggle. From the manner in which it is observed to search the grass with its bill, there can be no doubt that reptiles form part of its natural food; even mice, worms, and the larger insects, probably add to its usual repast. When searching in thick grass, or in the mud, for its prey, the bill is kept partly open: by this means I have observed it take eels in a pond with great dexterity: no spear, in common use for taking that fish, can more effectually receive it between its prongs than the grasp of the Stork's open mandibles. A small eel has no chance of escaping when once roused from its lurking place. But the Stork does not gorge its prey instantly like the Cormorant; on the contrary, it retires to the margin of the pool, and there disables its prey by shaking and beating with its bill, before it ventures to swallow it. I never observed this bird attempt to swim; but it will wade up to the belly, and occasionally thrust the whole head and neck under water after its prey. It prefers an elevated spot on which to repose: an old ivy-bound weeping-willow, that lies prostrate over the pond, is usually resorted to for that purpose. In this quiescent state the neck is much shortened by resting the hinder part of the head on the back: and the bill rests on the fore part of the neck, over which the feathers flow partly so as to conceal it, making a very singular appearance.

The Black Stork, perhaps, is not more delicate in the choice of its food than the White species: fish appears to be preferred to flesh; but when very hungry any sort of offal is acceptable.

All birds that pursue their migrative course by night in congregation, have undoubtedly some cry by which the whole assembly is kept together: yet it would appear that at other times the Black Stork is extremely mute; not a single note has been heard to issue from the bird in question since its captivity.

Colonel Montagu's specimen is still preserved, with his other British Birds, in the British Museum.

Like the species last described, the Black Stork is also a migratory bird, passing the winter in the southern parts of Europe. In the spring it advances to high northern latitudes to pass the summer, occasionally visiting Sweden: M. Nilsson, of Lund, naming several localities in which it had been seen, and particularly describing one bird that came under his examination in the month of August. Pennant, in his Arctic Zoology, quoting Linnæus, says that this bird goes to Russia and Siberia, as far as the Lena, where lakes and morasses abound. The Black Stork seldom comes so far to the westward as its generic companion, the White Stork, as it is almost unknown in Holland, and, according to M. Vieillot, very rare in France, though not uncommon in Switzerland and some parts of

Germany, and said to be abundant in Hungary and Poland. M. Polydore Roux considers it a bird of Provence; it is found in the salt marshes of Italy; inhabits Turkey; and the Russian naturalists enumerate it in their catalogue of the birds found in the countries between the Black and the Caspian Seas. It has been found in Nepal and at Calcutta. It probably inhabits, during the winter, a great part of Northern Africa, since Dr. Heineken included it among the birds of Madeira, and its southward range is extensive, Dr. Andrew Smith having brought specimens with him from the Cape of Good Hope.

The character of the Black Stork, as observed by Mr. E. T. Bennett, and others, is in one respect diametrically opposed to that of the White Stork. Instead of domesticating itself, as it were, with man, it shuns his society, and makes its temporary dwelling in the most secluded spots, frequenting impenetrable morasses, or the banks of such rivers and lakes as are seldom disturbed by the presence of intruders, and building its nest on the summits of the loftiest pines. It lays two or three eggs, of a buffy white colour, about two inches seven lines long, by one inch and eleven lines in breadth.

A very fine specimen of the Black Stork has lived in the menagerie of the Zoological Society in the Regent's Park for the last ten or twelve years; it seems perfectly quiet, never using its powerful beak as a weapon of offence against its fellow-prisoners, and makes no noise except the clattering sound which it produces by the snapping of its mandibles.

This Black Stork has stood for his portrait to illustrate the Ornithological works of Mr. Bennett, Mr. Selby, Mr. Gould, Mr. Meyer, and my own.

In the adult bird, the beak, and the naked skin around the eye, are red, tinged with orange; the irides reddish brown; the head, neck all round, upper surface of the body, wings, and wing-coverts, are glossy black, varied with blue, purple, copper coloured and green reflections; the primary quill-feathers and the tail black; the whole of the under surface of the body, from the bottom of the neck to the ends of the under tail-coverts, white; the legs and toes orange red; the claws black.

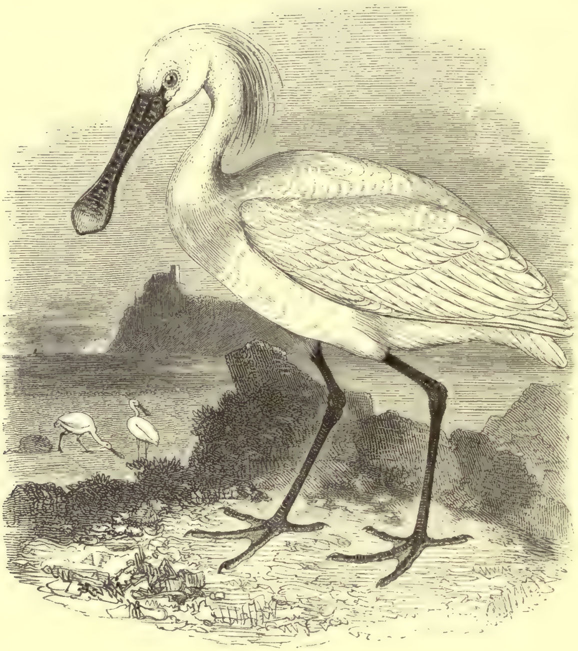
There is no difference in the plumage of the sexes.

The whole length of the specimen killed in Dorsetshire, was three feet four inches. From the carpal joint to the end of the wing, twenty-one inches; the length of the beak from the point to the angle of the gape, seven inches; length of the middle toe four inches; of the tarsus eight inches; of the naked part above, four inches and a half.

The colours in this specimen, which are not those of mature age, are thus described. Head and neck dusky brown; wings, tail, and back, black or dusky brown, with purple reflections; lower part of breast and belly white; bill and orbits bright orange; irides hazel; legs and toes pale red.

According to M. Temminck, in very young birds the beak, the naked skin around the eyes and the legs are olive green, the head and neck being then of a reddish brown.

GRALLATORES. *ARDEIDÆ.*



THE WHITE SPOONBILL.

Platalea leucorodia.

Platalea leucorodia,	*The Spoonbill,*	Penn. Brit. Zool. vol. ii. p. 3.
" "	*White* "	Montagu, Ornith. Dict.
" "	*The* "	Bewick, Brit. Birds, vol. ii. p. 31.
" "	*Common* "	Flem. Brit. An. p. 94.
" "	*White* "	Selby, Brit. Ornith. vol. ii. p. 51.
" "	" "	Jenyns, Brit. Vert. p. 193.
" "	*The* "	Gould, Birds of Europe, pt. ii.
" "	*Spatule blanche,*	Temm. Man. d'Ornith. vol. ii. p. 596.

Platalea. *Generic Characters.*—Bill very long, strong, very much flattened, dilated at the point, rounded in the form of a spoon; upper mandible channelled and transversely grooved at the base. Nostrils on the upper surface of the beak, near together, oblong, open, bordered by a membrane. Forehead, lore, orbits and chin naked. Legs long, strong, three toes in front, united as far as the second articulation by a membrane, the marginal edge of which is deeply concave; hind toe long. Wings rather large; the first quill-feather nearly as long as the second, which is the longest in the wing.

THE beak of the Spoonbill is one of those very singular modifications of an organ which nature sometimes exhibits as if to show the many diversities of form which can be rendered applicable to one purpose; for notwithstanding the difference so conspicuous in this instrument, the food of the Spoonbill is very similar to that of the Herons, the Bitterns, and the Storks, and the bird itself is in other respects very closely allied to the Waders already described.

The Spoonbill is recorded as a British bird by Merrett, on the authority of Dr. Turner, and by Sir Robert Sibbald as an accidental visiter to Scotland: he states having received it from Orkney. Sir Thomas Browne, who was contemporary with Merrett and Sibbald, says, "the Platea or Shrovelard build upon the tops of high trees. They formerly built in the Hernery at Claxton and Rudham; now at Trimley in Suffolk. They come in March, and are shot by fowlers, not for their meat, but their handsomeness; remarkable in their white colour, copped crown and spoon, or spatule-like bill." Record is also made of a flock of these birds which migrated into the marshes near Yarmouth, in April 1774. Spoonbills have since been killed on many occasions, and but for the recent, and almost universal practice of draining in this country, to bring fen land into successful cultivation, these birds might still be numbered among our constant summer visiters. Mr. Thompson of Belfast was informed by Mr. Ball of Dublin, that three Spoonbills were seen near Youghall in Ireland, in the autumn of 1829, and one of them was shot. Mr. Eyton has noticed one that was killed at Aberystwith in

January 1838. This species has occurred in Worcestershire and in Gloucestershire. Several specimens have been killed in Devonshire and in Dorsetshire, one of which happened near Poole. Four are known to have been killed in Suffolk, one of them at Aldborough, the other three at Thorpe, out of a flock of seven. Several have been obtained recently in Norfolk, particularly about Yarmouth. Two examples were received in London from Lincolnshire in 1826. Sir Robert Sibbald, as before observed, has recorded their occurrence in Orkney, and Dr. Fleming mentions one that was shot in Zetland.

In September 1843 a Spoonbill was shot at Lynn ; and E. H. Rodd, Esq. furnished the following notice to the Zoologist soon after.—(*See* page 364.) "On the evening of the 13th of October 1843, a flock of eleven White Spoonbills was seen to fly over Hayle, in the western part of Cornwall ; they were at length observed to alight in some marshy ground in the parish of Gwithian, on the north coast, a little to the eastward of St. Ives. Seven of them were shot, four of which I have had an opportunity of examining, and in their general appearance they display a more adult cast of plumage than either of the two Cornish examples which I have succeeded in obtaining before. The plumage of those at present under notice is free from any impurity in its whiteness, and there is a roseate blush observable in some of the dorsal feathers, towards their roots, this tint being especially apparent in, and as it were radiating from, the shafts of the feathers. Some of the specimens possess a much more extended bill than others, the excess amounting to an inch at least. The whole are without an occipital crest, or dorsal plumes, and it may be a question whether those specimens having bills so much longer than the others, may not be old birds in winter plumage. There is no yellow tint in any portion of the bills of any of the specimens; the colour being dark livid with a shade of flesh-colour."

Muller includes the Spoonbill among his birds of Denmark, and M. Nilsson says it is an occasional visiter to Sweden. Pennant, in his Arctic Zoology, says, "it inhabits the Faroe Isles; and on the continent is sometimes found in summer as high as West Bothnia and Lapland. Inhabits also the temperate parts of Russia and Siberia, both in flocks and solitary, frequenting the vast lakes of the country. Is seen even beyond lake Baikal. Winters in the south." I do not, however, find the Spoonbill included in the more modern catalogues of the birds of Lapland, Norway, or the Faroe Islands.

Like many of the wading birds with which it is allied, the Spoonbill is a migratory species, quitting the north of Europe, and more particularly Holland, which is its favourite summer resort, to pass the winter in the warmer parts of Europe, and has been found as far south in Africa as the Cape of Good Hope. It is found in Italy, where it passes the winter in the salt marshes, or in flocks on the sea coast. Pennant says that Aleppo is one of its winter retreats. Messrs. Dickson and Ross found this bird at Erzeroom in May, at the river, where it breeds; several nests are placed near each other, about the middle of the river. They are made of reeds, bound together by weeds, which are piled up a few inches above the water's edge. Over this foundation dried reeds are placed in various directions, to form the body of the nest, which is not lined with anything, and is just large enough to allow one bird to sit, and the other to stand beside it: we found four eggs in each. The Spoonbill was also found by the Russian Naturalists on the banks of the rivers, and in the marshes of the country between the Black and the Caspian Seas. Colonel Sykes brought specimens from India, which although three or four inches longer, were otherwise identical with the European bird. These specimens were obtained in the Dukhun, one hundred miles from the sea, and at an elevation of two thousand feet. Mr. Blyth has obtained it near Calcutta.

These birds build in some countries on high trees; in default of trees, they make their nests among reeds or rushes in the marshes, or near the lakes to which they resort. The materials have been already noticed in the floating nests seen by Messrs. Dickson and Ross. The eggs are four, two inches five lines long, by one inch eight lines broad, white, spotted with pale reddish brown. The birds feed on small reptiles, small fishes, mollusca, aquatic insects, shrimps, sand-hoppers, &c. many of which they find when feeding at pools on the seashore. Their flesh is dark in colour, but it is said to be of good flavour, and without any fishy taste. They are quiet and inoffensive in captivity, and, in common with the various species to which they are allied, will feed on any sort of offal.

In the adult male bird the beak is black, except the rounded part near the point, where it is yellow; the naked skin under the tongue and on the throat is also yellow; the irides red; the whole of the plumage pure white, except a band of feathers at the bottom of the neck in front, which is of a buff colour, and this tint extends upwards on each side in a narrow stripe to the top; the feathers of the occiput are elongated, forming a conspicuous plume; the legs, toes, and claws black; the toes connected by a considerable expanse of membrane which is concave at the margin between the toes.

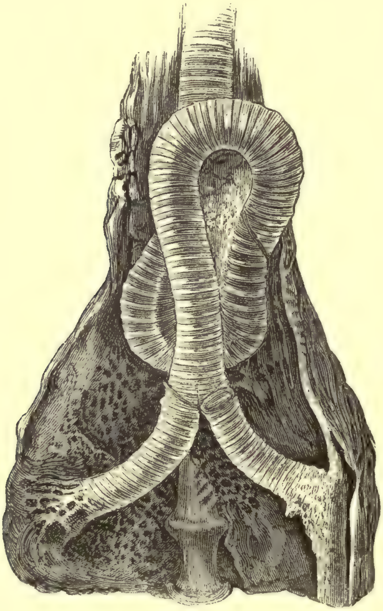
The whole length of the bird, from the point of the beak to the end of the tail, about thirty-two inches; of which, the beak in an old male will measure near nine inches; from the carpal joint to the end of the wing fourteen inches and a half; the first quill-feather not quite so long as the fourth; the second and third equal in length, rather longer than the fourth, and the longest in the wing.

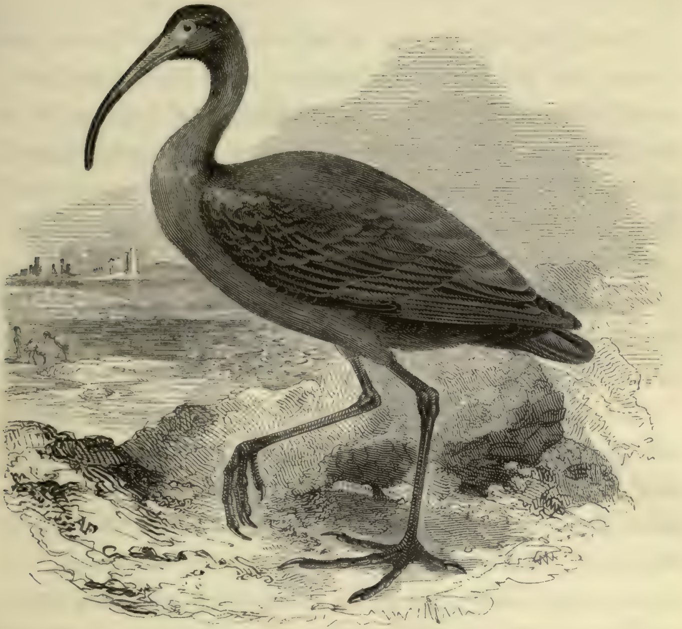
The females are not so large at the same age as males, and have a smaller occipital crest; but they are not otherwise dissimilar in plumage.

In young birds the beak is not so large, it is softer in its texture, more flexible and of a lighter colour; the naked parts about the head paler; the irides ash colour; the shafts and the ends of the quill-feathers are black, and there is no indication of the elongated occipital feathers, which at mature age are borne by both sexes.

The Spoonbill possesses a peculiarity of internal structure much too interesting to be passed over. This bird is one of the very few which has been found to possess no true muscles of the organ of voice, and no modulation of a single tone appears to be possessed by the bird. The figure inserted on the next page is a representation of part of the inside of this bird, with the figure of 8 like convolutions of its singular windpipe in the natural situation in front of the lungs; the insertion of the bronchiæ into the lobe of the lungs on each side is shown, but if compared with the representations of the organs of voice in birds at pages 71, 74 and 76 of the present volume, it will be seen that no particular ossification at the junction of the bronchiæ with the bottom of the tube of the trachea exists, nor any muscles by which variations in the length of the trachea or the bronchiæ can be effected. In a young Spoonbill taken from the nest, and examined by Willughby in reference to this particular structure, which is said to have been first noticed by Aldrovandus, this peculiarity was not found, and I have been told of another instance in which this structure was wanting, though the bird was examined by those who had found this anatomical peculiarity in every example of the species they had previously examined. I am therefore induced to suppose, that as this formation of the vocal organs is known to exist in old females as well as in old males, that, like the occipital crest, neither sex obtain it till they have acquired a certain degree of maturity.

The representation below is one third less than the natural size.





THE GLOSSY IBIS.

Ibis falcinellus.

Tantalus falcinellus,	*The Glossy Ibis,*	PENN. Brit. Zool. vol. ii. p. 30.
,, *igneus,*	,, ,, ,,	MONTAGU, Ornith. Dict.
,, ,,	,, ,, ,,	BEWICK, Brit. Birds, vol. ii. p. 35.
Ibis falcinellus,	,, ,, ,,	FLEM. Brit. An. p. 102.
,, ,,	,, ,, ,,	SELBY, Brit. Ornith. vol. ii. p. 56.
,, ,,	,, ,, ,,	JENYNS, Brit. Vert. p. 194.
,, ,,	,, ,, ,,	GOULD, Birds of Europe, pt. xii.
,, ,,	*Ibis falcinelle,*	TEMM. Man. d'Ornith. vol. ii. p. 598.

IBIS. *Generic Characters.*—Beak long, slender, curved, large at the base, the point depressed, obtuse, rounded; upper mandible deeply grooved throughout its length. Nostrils on the upper surface and near the base of the beak, oblong, narrow, pierced, in a membrane which covers part of the aperture. Face, lore, and sometimes the chin naked, without feathers. Legs rather long, naked above the tarsal joint; three toes in front, one behind, the anterior toes united by a membrane as far as the first joint; hind toe long and resting its length on the ground. Wings moderate, the first quill-feather shorter than the second and third, which are the longest in the wing.

There is good reason to believe that the Green, the Glossy, and the Bay Ibis of authors, with the various systematic names in use among ornithologists, refer only to various states of the same bird, depending on age or season, the difference in appearance inducing the names. Colonel Montagu, who paid great attention to the changes in the colours of plumage dependent on age, sex, and season, appears to have first pointed out the identity of these supposed species of Ibis, and gives the details at considerable length in the Supplement to his Ornithological Dictionary.

The appearance of the Glossy Ibis in this country, though not uncommon, is still accidental; the course of its migration for the summer towards the north of Europe being considerably to the eastward in a line from Egypt to Turkey, Hungary and Poland, to the southern parts of Russia. It is also occasionally seen on its passage from northern Africa in Crete, in the Grecian Archipelago, at Corfu, in Sicily, Sardinia and at Genoa. A straggler is sometimes found in Switzerland, Provence, France and Holland, but it is considered a rare bird.

Three specimens have been killed in Ireland, as recorded by N. A. Vigors, Esq., in the first volume of the Zoological Journal. One occurred some years ago in Lancashire, and is preserved in the collection of the Earl of Derby in that county. According to Montagu "the Ibis is adopted as a part of the arms of the town of Liverpool. This bird is termed a *Liver*, from which that flourishing town derived its name, and is now standing on the spot where the *Pool* was, on the verge of which the *Liver* was killed." The arms of the town of Liverpool are, however, comparatively modern, and seem to have no reference to the Ibis. The bird has been adopted in the arms of the Earl of Liverpool, and in a recent edition of Burke's Peerage is described as a Cormorant holding in the beak a branch of sea-weed. In the Plantagenet seal of Liverpool, which is believed to be of the time of King John, the bird has the appearance of a Dove with a sprig of olive, apparently intended to refer to the advantages that commerce would derive from peace. For a drawing of this ancient seal, with various other particulars, and also for a notice of the recent occurrence of an Ibis near the town of Fleetwood, on the river Wyre, I am indebted to the kindness of John Skaife, Esq., of Blackburn.

The Rev. Hugh Davis, the friend of Pennant, has noticed that a flock visited Anglesey, of which four or five were shot. Mr. Couch, in his Cornish Fauna, says that several specimens of the Ibis have occurred in Cornwall. Besides three formerly killed in Devonshire as recorded by Montagu, three others are mentioned by Dr. Edward Moore, and one by Mr. Bellamy; this last was obtained in October 1835 at Brideston in South Devon. I heard of one that was killed in Poole Harbour in October 1839 from the Earl of Malmesbury, and also from J. C. Austin, Esq., of Ensbury near Wimbourn. Montagu mentions one that was killed in Berkshire; another was killed at Whitmore-pond, near Guildford, in March 1833, and J. C. Hurst, Esq., of Dartford, sent me notice in 1837 of a specimen in his own collection that had been shot on the bank of a fish-pond in that neighbourhood. Many specimens have been obtained in Norfolk. The Rev. Richard Lubbock remarks that the Ibis was probably fifty years back more common in the neighbourhood of Lynn, Yarmouth, &c.: the old gunners used to talk of having, in their youth, often seen small parties of what they called "Black Curlews." Mr. Selby mentions one example, a young bird, now preserved in his own collection, that was obtained on the Coquet near Rothbury, in the autumn of 1820: from this specimen the representation of the Ibis published in some of the later editions of Bewick's British Birds was taken.

A fine adult bird of this species was killed on the borders of the Loch of Kilconquhar on the coast of Fife, in September 1842. Mr. Hepburn, who shot the bird, called upon me and made the communication. I believe this is the first record of the capture of the Glossy Ibis in Scotland.

Still further north, Muller includes the Ibis as a bird of Denmark. M. Nilsson says it sometimes visits Sweden, but very rarely, and it has appeared on some of the islands of the Baltic. Wagler, in his *Systema Avium*, page 182, enumerates Iceland among the northern localities visited by the Ibis; but this bird is not included in the catalogues, by the Fabers, and others, of the birds of Lapland, Norway, the Faroe Islands, or Iceland.

Specimens of this bird have been obtained by Dr. Andrew Smith, nearly as far south in Africa as the Cape of Good Hope. It is migratory in Egypt, where it appears to have been held in the same veneration formerly as the Sacred Ibis of authors: both species appear in the hieroglyphics of that country, and many bodies of both preserved by embalming have been found at Memphis and Thebes.

This bird appears to have been seen frequently by Messrs. Dickson and Ross in the vicinity of the river at Erzeroom; and the Naturalists with the Russian expedition met with it in the countries between the Black and the Caspian seas.

Dr. Latham considered it a bird of India on the authority of drawings made in that country, and Colonel Sykes has since brought specimens from the Dukhun. It has also been found at Thibet, Nepal and Calcutta. According to M. Temminck specimens of this same Ibis have been obtained at Java, at Sunda, and some of the neighbouring islands in the eastern seas. In the seventeenth part of his fine work on the Birds of Australia, Mr. Gould has figured an adult and a young bird, and observes that this species has been found in every part of the vast continent of Australia at present known to us.

The Glossy Ibis was first made known as an inhabitant of the United States of North America, by Mr. George Ord, the friend, the companion, and the biographer of Alexander Wilson. Though a rare bird in the Northern States, several examples have been obtained. Mr. Nuttall, in his Ornithology of the United States and Canada, says, that a specimen has occasionally been exposed for sale in the market of Boston. Mr. Audubon says, "it exists in vast numbers in Mexico. In the spring of 1837 I saw flocks in the Texas, but even there it is only a summer resident along the grassy margins of the rivers and bayous, and apparently going to and from its roosting places in the interior of the country." The bird figured by Mr. Audubon in his splendid work was obtained in Florida, and this Ibis has been figured as the Brazilian Curlew from specimens obtained in Brazil.

In Europe the Glossy Ibis lives principally on the banks of rivers, and on the shores of lakes or muddy flats which are occasionally flooded over ; feeding on small reptiles, the fry of fishes, small crustacea, aquatic insects, worms and other soft-bodied animals.—Of its nidification or its eggs little that I am aware of is known. Montagu says that it builds in trees, but for this, though very probable, no authority is named.

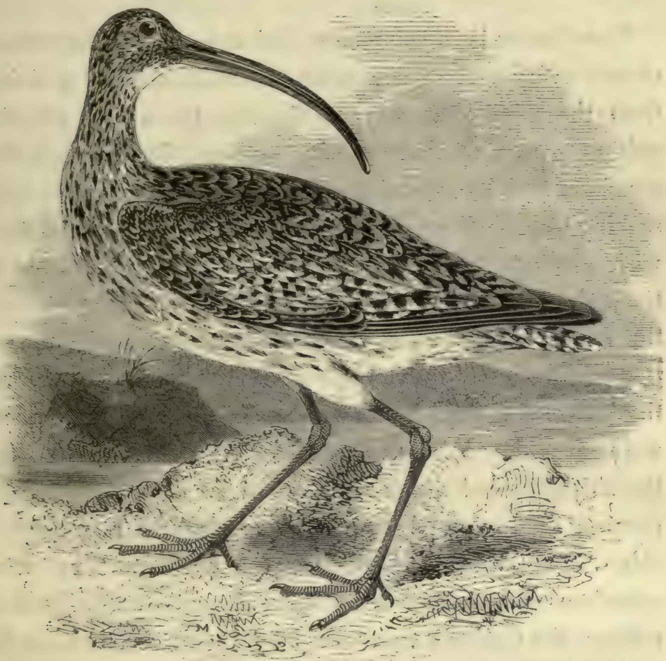
In the adult bird the beak is dark purple brown, the lore and the naked skin around the eyes olive green, tinged with grey; the irides hazel; the head, the neck all round and the interscapulars deep reddish brown; wing-coverts and tertials dark maroon brown with brilliant green and purple reflections; wing-primaries dark brownish black, tinged with green; tail-feathers brownish black, tinged with purple; breast, sides and belly deep reddish brown, like the neck; the under surface of the wings, the flanks and under tail-coverts dark brown; the legs and toes green, the claws olive brown.

The whole length of the bird about twenty-two inches. From the carpal joint to the end of the wing ten inches and three-quarters; the first and fourth quill-feathers equal in length, but shorter than the second and third, which are also equal in length and the longest in the wing.

M. Temminck says that females, at the same age, only differ from males in being smaller in size.

In young birds the head, cheeks, and upper part of the neck behind are dull clove brown, intermixed with short hair-like streaks of greyish white; on the throat in front, one and sometimes more patches of dull greyish white, placed rather transversely; the whole of the body above and below, the wings and the tail, dull uniform liver brown, with very little of the glossy tints observable in older birds, which are obtained gradually.

An opportunity occurred lately of obtaining some examples of the eggs of this Ibis. I possess one which measures one inch and seven-eighths in length, by one inch three-eighths in breadth; in form pear-shaped, the colour uniform bluish green, No. 51, of Werner's nomenclature by P. Syme.



THE COMMON CURLEW.

Numenius arquata.

Numenius arquata,	*Common Curlew,*	PENN. Brit. Zool. vol. ii. p. 34.
Scolopax "	" "	MONTAGU, Ornith. Dict.
" "	*The* "	BEWICK, Brit. Birds, vol. ii. p 38.
Numenius "	*Common* "	FLEM. Brit. An p. 101.
" "	" "	SELBY, Brit. Ornith. vol. ii. p. 62.
" "	" "	JENYNS, Brit. Vert. p. 195.
" "	" "	GOULD, Birds of Europe, pt. xiv.
" "	*Grand Courlis cendré,*	TEMM. Man. d'Ornith. vol. ii. p. 603.

NUMENIUS. *Generic Characters.*—Beak long, slender, curved and compressed, the point hard and slightly bent; upper mandible rather longer than the lower, rounded near the end and grooved along three-fourths of its whole length. Nostrils lateral, linear, pierced in the groove. Face and lore covered with feathers. Legs rather long, slender, tibia, partly naked; three toes in front, one behind;

the toes in front united by a membrane as far as the first articulation; the hind toe articulated upon the tarsus and touching the ground. Wings moderate, the first quill-feather the longest in the wing.

The Curlew is so common a bird as to be well known on almost every part of our coast, where it obtains a living from the middle of autumn, through the winter, till the pairing season of the following spring. It frequents the sea-shore and its extensive sandy flats during the ebb tide, seeking for small crustacea, marine insects, worms, &c., with which to satisfy its hunger, retiring to open fields in the vicinity when the rising tide covers the feeding ground. Sir William Jardine has described from personal observation the habits of these birds on the Solway. "They retired regularly inland after their favourite feeding places were covered. A long and narrow ledge of rocks runs into the Frith, behind which we used to lie concealed, for the purpose of getting shots at various sea-fowl returning at ebb. None were so regular as the Curlew. The more aquatic were near the sea, and could perceive the gradual reflux; the Curlews were far inland, but as soon as we could perceive the top of a sharp rock standing above water, we were sure to perceive the first flocks leave the land, thus keeping pace regularly with the change of the tides. They fly in a direct line to their feeding grounds, and often in a wedge shape; on alarm, a simultaneous cry is uttered, and the next coming flock turns from its course, uttering in repetition the same alarm note. In a few days they become so wary, as not to fly over the concealed station. They are one of the most difficult birds to approach, except during spring, but may be enticed by imitating their whistle." One cry peculiar to the Curlew sounds like corlieu or courlie; whence its English and French name.

Early in April the Curlews begin to retire from the coast and seek the breeding grounds. Mr. Selby feels assured from observations he has been able to make, that this movement is not so confined in extent as is supposed; that the winter visiters of the coast of Northumberland do not satisfy the migrative impulse by a flight of a few miles into the interior; but that these retire to the Highlands, or northern parts of Scotland and its isles, and many visit high northern latitudes to be hereafter mentioned, thus giving place upon the moors and open grounds of the border counties to those birds which have wintered in the southern parts of the kingdom. Mr. Thompson says the Curlew breeds in some of the large bogs of Ireland. Mr. Eyton says it breeds near Holyhead, and on Whixan moss in Shropshire. Mr. Couch, in his Cornish Fauna, says some few breed on the high grounds in Cornwall. Montagu states that they bred in his time on the high hills of Exmoor; and Mr. Bellamy says that this bird now breeds on Dartmoor. Montagu also mentions that he had taken the young on the mountains of Northumberland and in the low swampy grounds of the Isle of Mull in Scotland. Mr. Selby mentions the Curlew as very abundant during the breeding-season in all the central parts of the county of Sutherland, where heath and marshy tracts prevail. Mr. Dunn says the Curlew is rather plentiful in Orkney and Shetland, resorting to the most retired parts of mossy hills, in which situation it lays its eggs, procuring its food from the muddy banks of lakes. Throughout Scotland and its isles the Curlew is called a Whaap, or Whaup, which in Jamieson's Scottish Dictionary is said to be a name for a goblin, supposed to go about under the eaves of houses after nightfall, having a long beak. Sir Walter Scott refers to this supposed connection of a long beak with a suspicious character in his Black Dwarf (chap. ii.), in a dialogue between Hobbie Elliott and Earns-cliff, in the evening on Mucklestane Moor: the former says, "what need I care for the Mucklestane Moor ony mair than ye do yoursel, Earns-cliff? to be sure they say there 's a sort o' worricows and lang nebbit things about the land, but what need I care for them?"—and this enables us to understand the fag end of a Highlander's prayer to be saved harmless, "from witches, warlocks,* and aw lang-nebbed things."

The Curlew inhabits Denmark, Sweden, and Norway, during summer. In the latter country Mr. Hewitson, and the party with him, were surprised to see this long-legged bird alight on the top of a pine, and frequently afterwards pass from tree to tree uttering its loud note. This bird also in summer visits the Faroe Islands and Iceland. In an account of the Faroe Islands lately published it is stated that the Curlew even winters occasionally in the most southern of these islands, where the bays are never covered with ice, except in the coldest years; nor does the snow cover the ground above a week at a time, and is never deep.

The nest of the Curlew is slight: a few leaves or other dry materials, carelessly brought together among long grass or heath, or in a tuft of rushes, is all that appears. The eggs are four in number, pear-shaped and generally placed with the smaller ends together: the egg measures two inches seven lines in length, by one inch eleven lines in breadth, and is of an olive-green, blotched and spotted with darker green and dark brown. The young run almost as soon as hatched, but are unable to fly for a considerable time. In confinement these birds become tame enough to follow their feeder for the usual meal, and Montagu observed that they could swim with ease, but did not take the water without being driven.

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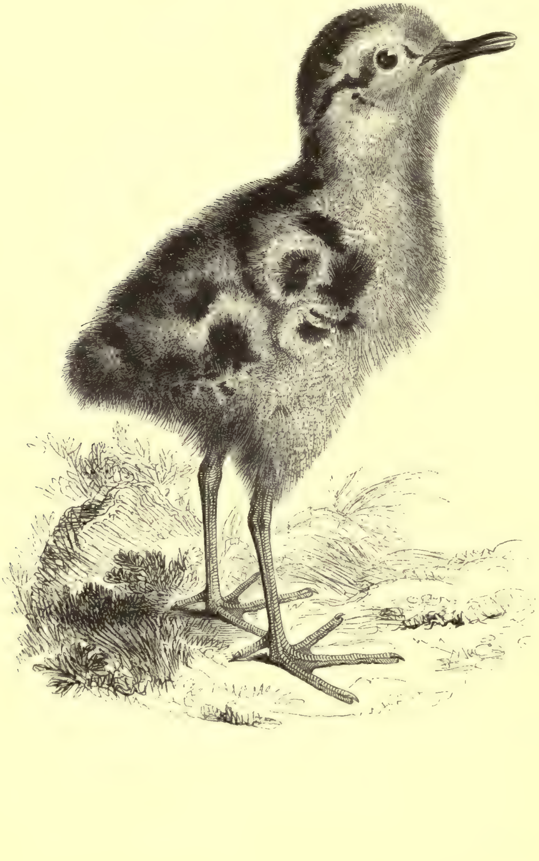
* A warlock, or wizzard, a man who is supposed to be in compact with the devil. Jamieson's Dictionary.

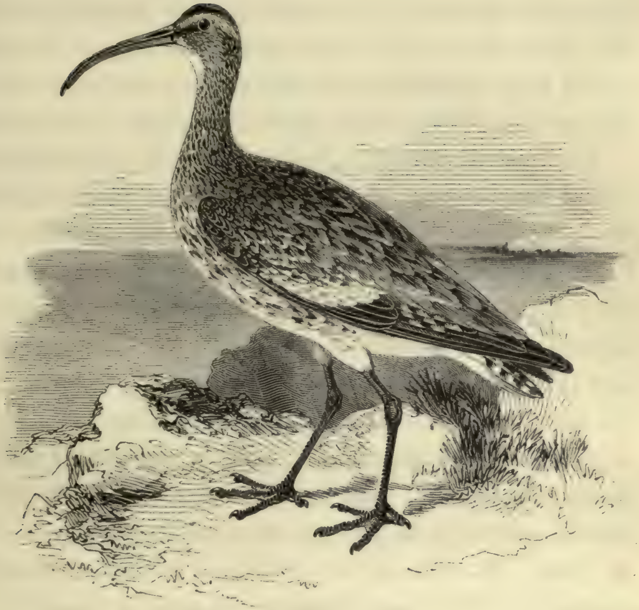
Besides the localities and countries already mentioned, Dr. Andrew Smith brought specimens from southern Africa, and the bird is found in various parts of the south of Europe. Mr. Strickland includes it among the birds seen by him at Smyrna, and M. Hohenacker found it in the countries bordering on the Caucasus. Our bird is found in Nepal and Calcutta; and M. Temminck says the European Curlew is found at Pondicherry, Japan, and the Islands of the Indian Archipelago, where another Curlew is also found that is still larger than our bird, and has a longer and more slender bill. Mr. Gould mentions having received skins of our Curlew from China.

The plumage of the male and female is very similar. The beak is dark brown, except the basal portion of the under mandible, which is pale brown; the irides dark brown; head and neck pale brown, the centre of each feather bearing a longitudinal streak of dark brown; the feathers on the upper part of the back brownish black, with pale brown edges; the lower part of the back and the rump white; upper tail-coverts white, with a lanceolate streak of dark brown towards the end; tail-feathers barred with dark brown and dull white; the smaller wing-coverts blackish brown with almost white edges, making this part of the wings appear lighter in colour than the back; the greater wing-coverts and the first five primary quill-feathers black, the latter with white shafts; the secondary wing-feathers and the tertials blackish brown in the centre, and barred transversely on the edges with dark and light brown; the chin white; front of the neck and upper part of the breast pale brown, streaked longitudinally with dark brown; lower part of the breast nearly white, and spotted rather than streaked with dark brown; vent and under tail-coverts white, the latter with an occasional dusky streak; legs and toes pale blue, becoming lead blue a few days after death.

Among the Curlews, the Godwits, Snipes, Sandpipers and others, the females are the largest, and, in a pair of the species now under consideration, remarkably so: the female measured twenty-six inches; the wing twelve inches and one quarter: the male in the whole length twenty-one inches, the wing eleven inches and a half. The first quill-feather of the wing the longest in both.

The vignette represents the young of the Curlew, for the opportunity of figuring which I am indebted to the kindness of T. C. Heysham, Esq. of Carlisle.





THE WHIMBREL.

Numenius phæopus.

Numenius phæopus,		*Whimbrel Curlew,*	Penn. Brit. Zool. vol. ii. p. 36.
Scolopax,	,,	*The Whimbrel,*	Montagu, Ornith. Dict.
,,	,,	,, ,,	Bewick, Brit. Birds, vol. ii. p. 40.
Numenius,	,,	*Whimbrel Curlew,*	Flem. Brit. An. p. 101.
,,	,,	,, ,,	Selby, Brit. Ornith. vol. ii. p. 65.
,,	,,	*The Whimbrel,*	Jenyns, Brit. Vert. p. 195.
,,	,,	,, ,,	Gould, Birds of Europe, pt. xxi.
,,	,,	*Courlis corlieu,*	Temm. Man. d'Ornith. vol. ii. p. 604.

In its plumage, its haunts, habits and food, the Whimbrel very closely resembles the Curlew last described, but is by no means so numerous as a species, and is also very considerably smaller in size, so much so that it has in some counties obtained the names of Half-Curlew and Jack-

Curlew in reference to its diminished comparative proportions. Though to be seen occasionally on many parts of our shores in winter, it is generally most plentiful in May, and again in Autumn, when these birds are on their way to and from the northern localities where they resort during the breeding season, and in which they produce their young.

The eggs of the Whimbrel are rare in collections, and I have never heard of any being obtained in the southern counties. Mr. Thompson, of Belfast, sends me word that these birds are only seen in Ireland in spring and autumn. They are seen also at the same periods on the Grampians and other high grounds of Scotland. Mr. Selby mentions that the Whimbrel was seen in the summer of 1834, upon the margin of Loch Shin in Sutherlandshire, but no eggs or young were obtained. Mr. Salmon, who visited the Isle of Hoy, in Orkney, says the Whimbrel breeds there, but goes to nest early, as the eggs were all hatched by the 3rd of June. Dr. Fleming says this bird breeds in Shetland, where it is called Tang-Whaap ; the nest is placed on exposed parts of the heath. Mr. Hewitson names two of the Shetland Isles, Yell, and Has-cosea, where they breed, but the birds are in small and rapidly decreasing numbers, their eggs being there considered a delicacy. Mr. Dunn, who has more than once visited both Orkney and Shetland, says, the Curlew and the Whimbrel do not associate together, although he has found their nests within a gun-shot of each other. The latter birds leave these islands immediately after the breeding season is over.

The eggs are four in number, of a dark olive brown, blotched with darker brown ; they are pear-shaped, and very much like those of the Curlew, but smaller, measuring two inches five lines in length, by one inch eight lines in breadth. The birds feed on insects and worms, and their note is said to resemble the words tetty, tetty, tetty, tet, quickly repeated.

To the northward of our own country the Whimbrel visits Denmark and Sweden. Mr. Hewitson saw it occasionally in the western parts of Norway. Richard Dann, Esq. tells me that a few breed annually in Lapland, as high as 65° N. lat.; and this bird is included among the constant summer visiters to the Faroe Islands, and to Iceland.

The Whimbrel is found as far south in the winter as Madeira, and the line of North Africa, and is seen on its passage on various islands of the Mediterranean, in Italy, Genoa, Spain, Provence, France, Holland, and Germany, but is more common in Holland, than in France or Germany. It was found by M. Menetries, the Russian Naturalist, on the borders of rivers in the Province of Caucasus. It is found in various parts of India; and M. Temminck says, that specimens from Japan do not differ from those of our European bird.

The beak is brownish black, pale brown at the base of the under mandible; the irides dark brown; the top of the head dark brown, with a light brown streak passing backwards over the top to the occiput; from the angle of the gape to the eye a dark brown streak; over that, and passing in continuation over the eye and the ear-coverts, is a light coloured streak; the feathers of the neck, all round, dull brownish white, with dark central streaks; interscapulars, scapulars, and wing-coverts dusky brown, with dull brownish white margins; wing primaries greyish black, the secondaries barred with white; rump white; tail-feathers pale brownish white, transversely barred with darker brown; chin white; chest pale brown, each feather with a dark brown central streak; breast and belly nearly white; flanks dull white, barred transversely with brown;

under tail-coverts nearly white, with brown longitudinal streaks; legs and toes bluish black; claws black.

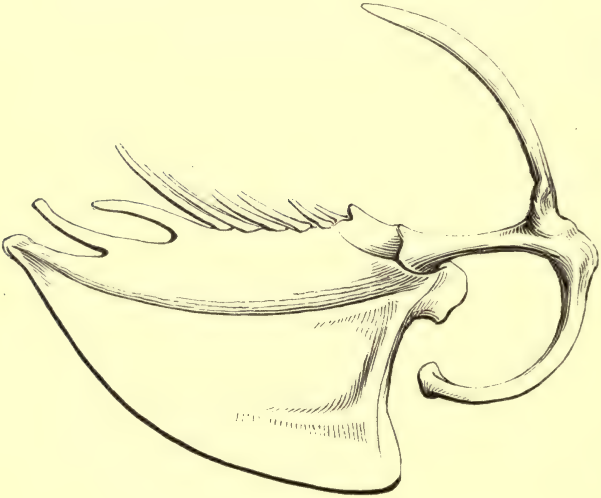
The female, from which the representation was taken, measured eighteen inches; the beak, from the point to the commencement of the feathers on the top, three inches and a half.

An adult male measured sixteen inches; the beak three inches; the wing, from the carpal joint to the end of the longest primary quill-feather, nine inches and a half; the first quill-feather the longest in the wing.

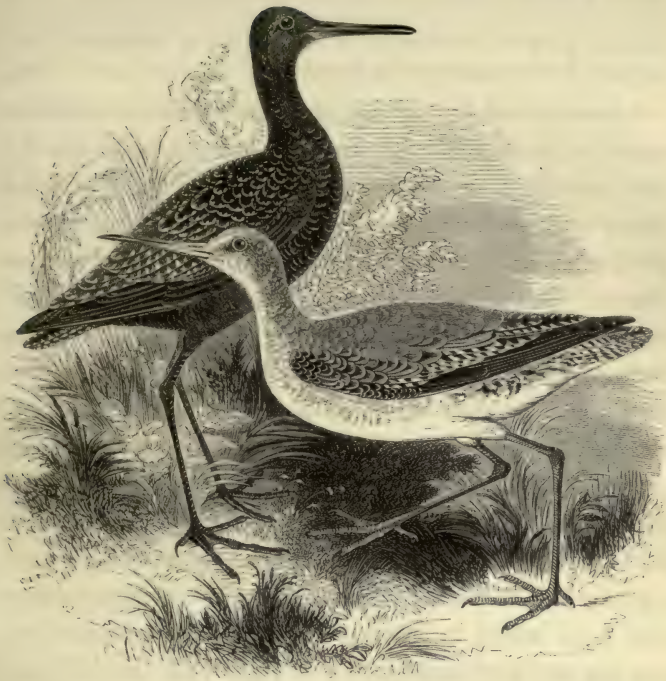
In young birds of the year the beak is very short, not exceeding two inches in length; but the sexes, whether old or young, do not differ much either in tints or markings.

The flesh of the Curlew and the Whimbrel are alike excellent.

The figure below represents the breast-bone of the Curlew, one-third less than the natural size.



GRALLATORES. *SCOLOPACIDÆ.*



THE SPOTTED REDSHANK.

Totanus fuscus.

Scolopax totanus,	*Spotted Snipe,*	PENN. Brit. Zool. vol. ii. p. 59.
,, ,,	,, *Redshank,*	MONTAGU, Ornith. Dict.
,, ,,	,, *Snipe,*	,, Supplement.
,, ,,	,, *Redshank,*	BEWICK, Brit. Birds, vol. ii. p. 73.
Totanus fuscus,	,, ,,	FLEM. Brit. An. p. 102.
,, ,,	*Dusky Sandpiper,*	SELBY, Brit. Ornith. vol. ii. p. 69.
,, ,,	,, ,,	JENYNS, Brit. Vert. p. 196.
,, ,,	*Spotted Redshank,*	GOULD, Birds of Europe, pt. ix.
,, ,,	*Chevalier arlequin,*	TEMM. Man. d'Ornith. vol. ii. p. 639.

TOTANUS. *Generic Characters.*—Beak of moderate length, sometimes long, straight, or very slightly curved, soft at the base, hard, solid and cutting at the point, compressed throughout the whole length, ending in a sharp point; both mandibles grooved at the base; the extreme end of the upper mandible slightly bent towards the under one. Nostrils lateral, linear, pierced longitudinally in a groove. Legs long, slender, naked above the tarsal joint; three toes in front, one behind; the middle toe united to the outer toe as far as the first articulation by a membrane, which sometimes extends as far as the second articulation. Wings moderate; the first quill-feather the longest.

Although but few records of the occurrence of this bird appear in print, and it is considered rare as a species, it is not uncommon in the London market in autumn and in winter; where, however, specimens in the singular sooty black colour of the plumage assumed in summer are unknown. It is seen occasionally in spring, on the way to its breeding ground in high northern latitudes; but young birds of the year are more frequently obtained on their return, and in some instances a parent bird is taken, still bearing a portion of the darker colour which pervades both sexes during the breeding season. Pennant records a specimen killed in Anglesey. Mr. E. H. Rodd, of Penzance, has in the autumn of the present year 1840, obtained one, a young bird of this season, in Cornwall. Montagu notices two, both killed in Devonshire. Mr. Wm. Borrer, jun., sent me notice of one obtained in April 1838, in the Isle of Ely. The authors of the Catalogue of the Norfolk and Suffolk Birds mention four: three shot in the vicinity of Yarmouth, the fourth near Ipswich. Bewick and Mr. Selby mention two killed in Northumberland. Mr. Heysham has recorded two, both killed in autumn, in the vicinity of Carlisle; a third is mentioned to have occurred on the coast near Whitehaven, and Mr. Thompson shot one in Belfast Bay, in August 1823. The latest recent specimens I have seen were two in the possession of Mr. Bartlett, obtained in the autumn of the present year 1840, one of which was an adult bird in an interesting state of change from the summer to the winter dress, the whole of the under surface of the bird being a mixture of black and white. The figure in the foreground of the representations here given is from an adult bird in its perfect winter plumage, obtained in the London market; the figure in the background is from a specimen in summer plumage, obtained some years since in the fens of Cambridgeshire. The finest specimens in summer plumage I have yet seen are in the collection of Richard Dann, Esq., who in several summer excursions, when fishing and shooting in Norway and Lapland, found these birds breeding in stagnant mosses within the Arctic circle. Mr. Dann says, that though close search was made for their nests he was unable to find their eggs; several pairs of the birds were obtained, which, while on the wing, utter two short notes (*wee wit*) in quick succession. M. Nilsson says the Spotted Redshank breeds in various parts of Scandinavia, but the eggs are also unknown to him. Old and young leave the high northern ground in August, and are seen in Sweden on their passage southward in small families. Muller includes this species in his Zoologia Danica, and from these northern shores it may be traced southwards to Holland, France, Spain, Provence, Switzerland, and Italy, in each of which countries it is seen on its passage in spring and autumn. It inhabits the sea-shore, the borders of rivers and lakes, morasses and water meadows, feeding on worms, aquatic insects, and small testacea. The stomachs of Mr. Bartlett's specimens contained only very minute spiral univalves.

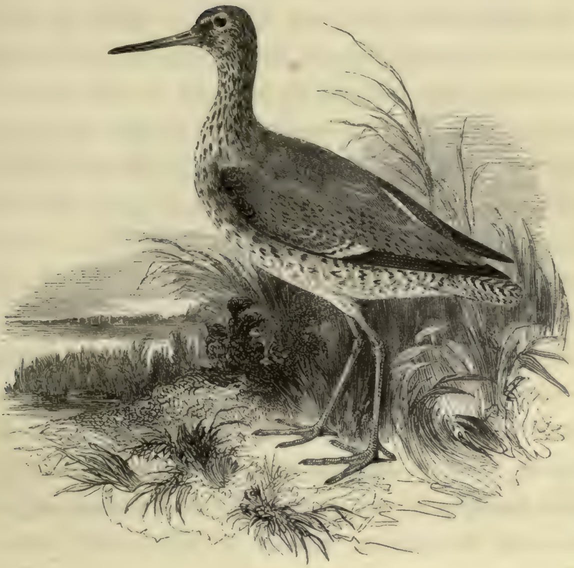
This species is found in Nepal and in the vicinity of Calcutta.

The adult bird in its winter plumage has the beak black, except at the base, where it is bright red; the irides dark brown; from the nostril to the eye a dusky grey streak: above that a white streak as far as the eye; top of the head, back of the neck, and upper part of the back, ash grey : lesser wing-coverts ash grey, margined with white; greater coverts, the secondaries and tertials, also ash grey, with well-defined triangular spots of pure white along the sides of each feather ; wing primaries greyish black, without spots ; rump white ; upper tail-coverts barred with dusky grey and white ; middle tail feathers plain ash grey, the outer feathers on each side, like the upper tail-coverts, are barred with dusky grey and white ; the chin white ; sides and front of the neck white, tinged with ash colour ; breast, belly, vent, and under tail-coverts pure white ; flanks slightly tinged and streaked with ash grey ; legs and toes vermilion red, claws black.

The adult bird in summer has the beak nearly black, but the base of the lower mandible is dark red ; the irides dark brown ; over the eye the eyelid is white ; the whole of the head, and the neck all round, sooty black : back, scapulars, all the wing-coverts, secondaries and tertials, sooty black, with well defined triangular spots of pure white along the margin of the web of each feather, which is also tipped with white ; the primaries black, with white shafts, but no white spots ; breast and belly black, a few of the feathers with white tips ; under wing-coverts white, with dusky grey spots ; axillary plume pure white ; under tail-coverts barred black and white ; legs and toes dark red, claws black.

Males and females do not differ in plumage, but the females are rather larger than the males. An adult male measured in whole length twelve inches and a half; from the carpal joint to the end of the wing six inches and a half; the first quill-feather the longest in the wing.

In young birds of the year the plumage on the upper surface of the body is tinged with brown, and the white colour of the under surface of the body is clouded with ash grey : the legs orange red.



THE COMMON REDSHANK.

Totanus calidris.

Scolopax	*calidris,*	*Common Redshank,*	Penn. Brit. Zool. vol. ii. p. 57.
"	"	" "	Montagu, Ornith. Dict.
"	"	*The* "	Bewick, Brit. Birds, vol. ii. p. 75.
Totanus,	"	" "	Flem. Brit. An. p. 102.
"	"	*Redshank Sandpiper,*	Selby, Brit. Ornith. vol. ii. p. 72.
"	"	" "	Jenyns, Brit. Vert. p. 196.
"	"	*The Redshank,*	Gould, Birds of Europe, pt. v.
"	"	*Chevalier gambette,*	Temm. Man. d'Ornith. vol. ii. p. 643.

The Common Redshank is much more numerous, and accordingly much better known, than the species last described, and is resident in many parts of this country all the year. In the winter season it frequents and feeds on the sea-shore, over those extensive flats which are left bare by every receding tide, and the birds are then seen in flocks;

in the spring, however, they retire to fens and marshes, near pools or lakes, and to the banks of rivers, where during the breeding season they are only seen singly or in pairs. They feed on aquatic insects, and on marine or other worms, which they probe for with their beaks in soft mud. Mr. Thompson says they are common in Ireland, and a writer in the first volume of the Naturalist, mentions "that they are very numerous in Dublin Bay, where it is stated these birds may sometimes be seen in very large flocks, frequently amounting to one hundred and fifty or two hundred; and the larger the flock, the more shy and difficult were the birds of approach; they are always on the look out, and take wing on the least alarm or any appearance of danger; when running along the sands, the Redshank has the same kind of dipping motion for which some of the smaller Sandpipers are so remarkable. I was very much struck with the curious manner in which they dart their bills into the sand nearly its whole length, by jumping up, and thus giving it a sort of impetus, if I may use the word, by the weight of their bodies pressing it downwards."

Redshanks are not uncommon in Cornwall, Devonshire, and Dorsetshire. They still frequent Romney Marsh as they did in the days of Montagu, for the purpose of breeding. Mr. Jesse sent me a specimen killed at Hampton in autumn. The authors of the catalogue of the Norfolk and Suffolk birds say, "the Redshank is found in considerable numbers in many of the marshes both of Norfolk and Suffolk during the breeding season. It is indeed more common than any other kind of wader. To sportsmen it is very troublesome, flying around them and uttering an incessant shrill whistle, which alarms all the other birds near the spot."

The Redshank is found, as might be expected, in Lincolnshire. Mr. Selby says it is common in Durham and

Northumberland. Several have been killed in Cumberland. Mr. Don says it breeds on the heaths of Forfarshire. Mr. Selby says, "the Redshank was found breeding on the marshy margin of Loch Doulich, near Lairg, and at the head of Loch Naver, in Sutherlandshire. When disturbed from its nest, and as long as the young are unable to fly, the old birds are very vociferous, and wheel around the intruder in circles, making frequent stoops, as if to strike at the head, like the common Lapwing." Redshanks are not numerous, according to Mr. Dunn, either in the islands of Orkney or Shetland. It is found in Denmark, Sweden, and Norway, where it is a summer visiter, appearing in April; and also visits Lapland, the Faroe Islands, and Iceland. Dr. Richardson, in his Fauna Boreali Americana, says, there is a Redshank in the British Museum from Hudson's Bay. Pennant says it is found eastward as far as Siberia, it inhabits India, and M. Temminck says it is found in Japan.

In the south of Europe it is found in Provence and Italy, Corfu, Sicily, Malta and Crete. The Zoological Society have received specimens in winter plumage from Tangiers, and also from Trebizond, and Mr. Strickland says it is a common bird in the marshes of Smyrna.

The Redshank can swim well, and sometimes perches on trees. Montagu says it makes a slight nest with coarse grass near the moist parts, or most boggy places in fens, and begins to lay early in May: the egg is pale reddish white, tinged with green; blotched, spotted, and speckled with dark red brown; the length one inch six lines and a half, by one inch and two lines in breadth.

In winter the beak is black at the point, dark red at the base; the irides brown; from the angle of the mouth to the eye a dusky streak, over that and the eye a white streak;

the top of the head, the back of the neck, the whole of the back and wing-coverts, ash brown; the wing-primaries almost black; the rump white; the tail-feathers white, barred transversely with dusky grey; the chin, the neck in front, breast, belly, and under tail-coverts white, with a few slight dusky streaks in the line of the shafts of the feathers; legs and toes red; the claws black.

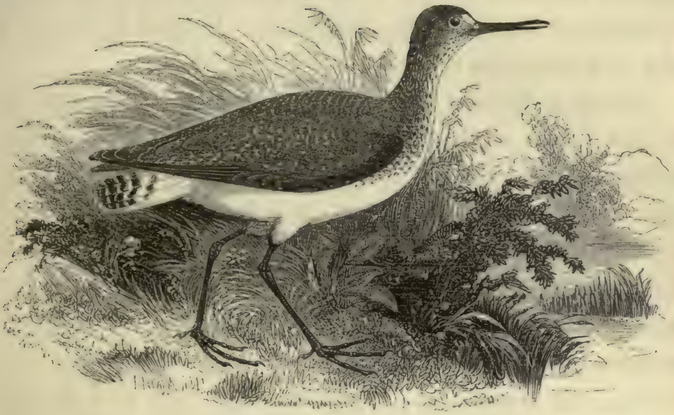
In its spring plumage, the state in which it is here represented, when assuming by degrees the darker markings peculiar to the breeding season, the greater coverts and tertials are varied with spots, brownish black on the edges, and the white parts of the front of the neck, and all the under surface of the body, sides and flanks are spotted and streaked with brownish black.

By the first week in June, the lighter ash-coloured edges of the wing-coverts and tertials are more strongly marked with brownish black; a few dark coloured feathers appear on the back; the general plumage of the back is tinged with brown, and the black streaks and spots on the white surface of the neck and breast are more conspicuous.

With the moult which succeeds the breeding season, these birds assume again the plumage of winter.

Males and females resemble each other in their colours, but the females are larger than the males.

The whole length of an adult female is about eleven inches. From the carpal joint to the end of the wing six inches and three quarters; the first quill-feather the longest in the wing.



THE GREEN SANDPIPER.

Totanus ochropus.

Tringa	*ochropus,*	*Green*	*Sandpiper,*	**Penn.** Brit. Zool. vol. ii. p. 86.
"	"	"	"	**Montagu,** Ornith. Dict.
"	"	"	"	**Bewick,** Brit. Birds, vol. ii. p. 89.
Totanus	"	"	"	**Flem.** Brit. An. p. 103.
"	"	"	"	**Selby,** Brit. Ornith. vol. ii. p. 75.
"	"	"	"	**Jenyns,** Brit. Vert. p. 197.
"	"	"	"	**Gould,** Birds of Europe, pt. xv.
"	"	*Chevalier cul blanc,*		**Temm.** Man. d'Ornith. vol. ii. p. 656.

The habits of the Green Sandpiper in this country are not yet perfectly understood. These birds appear to be the most plentiful in spring and autumn; a few remain here to breed, but the greater part go for a time to the North of Europe, probably returning with their young. Examples not unfrequently occur in the various months of winter. They frequent the sides of shallow streams, the banks of rivers, canals, or lakes inland, and are not usually found so near the sea as some of the other Sandpipers. They are observed when running, to spread and flirt the tail up like our Common Sandpiper. Their food consists of worms and insects, and their note is a shrill whistle, whence it is by some called the Whistling Sandpiper. Colonel Sykes says the note resembles the word *cheet*, *cheet*, *cheet*.

The Rev. Richard Lubbock has sent me several notices of the habits of this bird in Norfolk, from which the following are extracts. " Sir Thomas Beevor told me that one of these Sandpipers built in a hollow on the side of a clay-pit upon his estate, in the autumn of 1839, and hatched four young, which, to his vexation, were taken by a shepherd's boy. They are common during summer and autumn upon a small stream which runs through his property near Attleburgh. I have noted this bird as observed at the end of October 1824, on the twenty-third of December, 1832, and the ninth of December, 1836. I killed a specimen in most severe weather on the fourth of January, 1837, deep snow on the ground, and all the Snipes driven out of the country by stress of weather. This Sandpiper has probably the loudest note, for its size, of any of our fen birds." In a letter, received on the fifteenth of September last, 1840, this gentleman says, " after observing these birds about the neighbouring streams for several seasons continuously, I am nearly certain that they remain here all the year, with the exception of that period in spring and early summer, during which they withdraw to hatch and rear their young. I have shot them in extreme frosty weather, and have always seen one here and there during the Snipe shooting, in March, but the eleventh of April is the latest time in spring at which I have observed them. This year I requested my nephew, who is often about the rivulet looking for fish, to let me know as soon as he perceived their return. On the twenty-third of July he told me that he had seen six together, and on the twenty-sixth of the same month I found them near the place he had mentioned. By creeping on my hands and knees, I obtained a good view of them as they walked about on a mud bank, and believe from the duller look of the plumage of some, that they were two old birds with a brood of young ones. They appear to separate soon after their arrival, or to unite for a day or two as fancy leads them."

The authors of the catalogue of Norfolk and Suffolk birds, say, "we cannot positively affirm that this species breeds here, though it seems probable that it sometimes does so, as five Green Sandpipers were constantly found one summer near the old decoy at Levington in Suffolk." Mr. Salmon believes that the Green Sandpiper breeds in Norfolk. It has been killed in Cambridgeshire in May and in August. The specimen from which the figure at the head of this subject was drawn, was given me by my friend Thomas Wortham, Esq. of Royston, who shot it at Bassingbourne Spring in Cambridgeshire, a favorite locality, where several other examples have been killed. The bird is seen in these eastern counties throughout the winter.

Mr. Blyth considers that the Green Sandpiper breeds in Surrey, having seen a very young one shot near Godalming with its primary quill-feathers incompletely developed. The same observer saw both adult birds and young broods of three or four birds each in the first week of August 1837, frequenting muddy water courses on a small salt-water marsh near Yarmouth, in the Isle of Wight, and has known one specimen to have been killed in February. It is not uncommon along the whole line of the southern marine counties from Romney Marsh in Kent, to Sussex, Hampshire, and thence to the Land's End. Mr.

Edward Doubleday saw several pairs about small streams in the vicinity of Snowdon, in summer, and two pair were observed near Capel Carig. This bird is a summer visiter to Ireland, and specimens are to be seen in several collections. John Skaife, Esq. of Blackburn in Lancashire, has in his collection a male and female that were shot at the end of July 1837, on a small brook that falls into the Darwen about three miles and a half south of Blackburn: circumstances induced the belief that this pair of Green Sandpipers had bred in that neighbourhood. Mr. Heysham has recorded several instances of the occurrence of this bird in Cumberland, but these have generally happened from August to October. H. Bickley, Esq. sends me word that this species, as also *Tringa hypoleucos*, frequent brooks about Melton in Leicestershire in summer. A specimen has been killed in May near Newcastle. Mr. Selby mentions three that have been killed in autumn in Northumberland, and adds that John Murray, Esq. of Murraythwaite in Dumfriesshire, possesses a male and female, shot by him when together, near that place in the spring of 1829.

Mr. Henry Doubleday sent me word lately, that on the 2nd of November 1840 he shot a Green Sandpiper in the vicinity of Epping, but never saw one there so late in the season before. "As the bird was only slightly wounded in the wing I did not kill it, and it is still alive; it is not at all shy, and feeds readily upon small worms, first dipping them in a pan of water; it runs about the room rapidly, and is constantly moving its tail up and down like a Wheatear. Mr. Selby observes that this bird when flushed utters a shrill whistle, and generally flies low, skimming over the surface of the water, and following with precision all the bends and angles of the stream." The nest is on the bank, or among grass by the side of a stream. The eggs are four in number, and are figured by Dr. Ludwig Thienemann in his Work on the Eggs of the Birds of Europe, tab. xvii. figure 6, as one inch and a half long, by one inch and one-eighth broad, of a pale brown tinged with green, and spotted over the broad end with blackish brown. The flesh of the Green Sandpiper is said to be excellent.

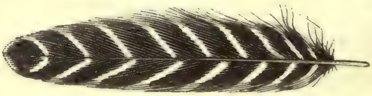
This bird visits Scandinavia in spring, and remains till August. It is not included among the Birds of the Faroe Islands or Iceland, but one or two examples are said to have been obtained as far to the North West as Hudson's Bay. In spring and autumn it is found over Europe generally; in France it is esteemed for its delicate taste, and it is caught with limed twigs placed near its haunts. The bird is seen in Switzerland, Provence, Italy, and several islands of the Mediterranean. Mr. Strickland observed it at Smyrna; M. Vieillot says it is found in Egypt. The Zoological Society has received specimens from Trebizond; and M. Menetries has included it in his catalogue of birds found south of the Caucasus. Colonel Sykes, Major Franklin, B. Hodgson, Esq., and Mr. Blyth, obtained specimens in different parts of India; and M. Temminck says it inhabits Japan.

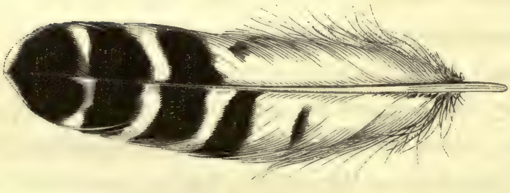
The beak is greenish black; the irides hazel; from the beak to the eye a dusky brown streak; over that and over the eye a white one; top of the head, back of the neck, back and wing-coverts, dusky green, slightly undulated with darker shades; primary quill-feathers uniform dusky black; scapulars and tertials greenish brown, with numerous small light-coloured spots along both edges of the scapulary feathers and on the outside margin only of the tertials; upper tail-coverts white; tail-feathers for the greater part white; the outside feather on each side, with one small dark spot on the outer web near the end; the next feather with two dark spots; the third and fourth with two rather broad dark bands; the fifth and sixth with three or four dark bands, but all the marks are on the distal half of the tail-feathers, leaving the basal half pure white; chin white; throat, front and sides of the neck white, streaked downwards with dusky lines; breast, and all the under surface of the body white; sides and axillary plume greyish black, with narrow angular white bars; under wing-coverts greyish black, with narrow transverse bars of white; legs, toes, and claws, greenish black.

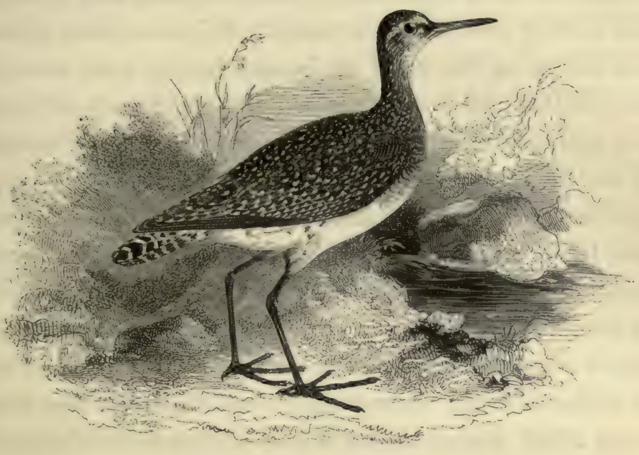
The whole length nine inches and a half. From the carpal joint to the end of the wing, five inches and five eighths; the first quill-feather the longest in the wing.

The young have rather more of the ash colour in their plumage, and less of the dark green.

Of the two representations of feathers given below, the upper one is from the axillary plume, the lower one from the middle tail-feather of the Green Sandpiper, to show the distinction between these feathers and two others from the same parts in the Wood Sandpiper, as inserted at page 606.







THE WOOD SANDPIPER.

Totanus glareola.

Tringa	*glareola,*	*Wood*	*Sandpiper,*	Penn. Brit. Zool. vol. ii. p. 88.
„	„	„	„	Montagu, Ornith. Dict.
„	„	„	„	Bewick, Brit. Birds, vol. ii. p. 99.
Totanus	„	„	„	Flem. Brit. An. p. 103.
„	„	„	„	Selby, Brit. Ornith. vol. ii. p. 77.
„	„	„	„	Jenyns, Brit. Vert. p. 198.
„	„	„	„	Gould, Birds of Europe, pt. xv.
„	„	*Chevalier sylvain,*		Temm. Man. d'Ornith. vol. ii. p. 654.

The Wood Sandpiper was first discovered as a British Bird by Colonel Montagu, who clearly pointed out the specific differences between this species and the Green Sandpiper last described. The birds are certainly somewhat alike, not only in their appearance, but also in their habits, and have been considered by some authors as merely varieties of the same species; no doubt, however, now remains that these two Sandpipers are perfectly distinct, and the species now under consideration has the greater geographical range of the two. The Wood Sandpiper has even become of much more frequent occurrence of late years in this country than it was formerly. It is considered a summer visiter to the south of Ireland, having been seen by Mr. R. Ball for several years about the month of June, frequenting a stream in Glenbower wood, near Youghal. E. H. Rodd, Esq. of Penzance, sent me word that seven specimens were obtained in one day in the month of August last, 1840, near the Land's End; one of these birds, very beautifully preserved, was soon afterwards presented to me by him, and proved to be a young bird of the year; the others were also reported to be young birds of the year. In reference to the visits of the Wood Sandpiper and some other allied species to the shores of Cornwall, Mr. Rodd makes the following remarks. "On the 21st of April a male specimen of the Wood Sandpiper was shot on the seashore: I am not aware of the occurrence of this species in this neighbourhood at an earlier period of the year. On the 20th of May 1840, a female was killed at the Land's End, in which were the rudiments of eggs. In June of the same year another was killed in the same locality; and in the month of August of the same year, a flock of seven were killed in the same parish, which proved to be birds of that year, and have been noticed above. At this period of the year, I have observed that birds of the Tringa, Totanus, and Limosa genera, which migrate from the continent, as well as from our own country, northward to breed, commence their return movement very early in the autumn, and the first flights consist almost entirely of the young birds of that year." This species has been killed in the spring in Essex. A pair of these birds, as I learn from Mr. Henry Doubleday, were observed at a pond on Weald common, near Epping, in May last, 1840; the female was shot and brought to him: on examination the eggs were found to be much enlarged. Specimens have been killed in Cambridgeshire, Suffolk, and Norfolk; Mr. W. R. Fisher has recorded the recent capture of this species at Yarmouth; and Mr. Selby has recorded three instances that have occurred in Durham and Northumberland.

Some particulars of the habits of this bird, as observed by the late Mr. Hoy, and communicated to Mr. Hewitson, are thus detailed in his work on the eggs of our British Birds. "This species is migratory, making its appearance in April, and retiring in September. That it breeds rather early I infer, from having met with the young, feathered, and capable of flying a short distance, on the 11th of June. I regret that I did not discover the bird till late in the season."

A great portion of Dutch Brabant, more particularly the southern and eastern parts, are covered by large tracts of heath; the soil of a light sandy nature. A great number of peat bogs and shallow pools of water are dispersed over this district. Most of the small streams are skirted by swampy ground, where the bog myrtle grows in the greatest luxuriance, with stunted bushes of alder and willow. These situations are the favourite haunt of this Sandpiper during the breeding season. While the hen bird is sitting, the male flies round in wide circles, and at a considerable elevation. The female sits close; and the nest is extremely difficult to find.

If you approach the spot when they have young, and especially if a dog is with you, the old birds will fly round in the most anxious manner, and will hover over the dog within a few feet; then suddenly darting off, mount high in the air, pouncing down again with great rapidity on the intruder. If you have observed the actions and manœuvres of the Redshank, during the breeding season, you will have seen very much the habits of the Wood Sandpiper.

It is far from being numerous in the localities where I met with it; yet many pairs are dispersed over these districts, where they have long been known to breed, from information which I obtained from several intelligent sportsmen, to whom the bird was well known.

Although I met with the young in a downy state, and partially feathered, I only obtained one nest with eggs. The nest is generally placed at a short distance from the water, among stunted heath, or scrubby plants of the bog myrtle, or among coarse grass and rushes. It is placed in a hollow, and is formed of dry grass and other plants. The eggs are four in number. An egg is figured by Mr. Hewitson in his work. One egg of the Wood Sandpiper in my own collection measures one inch seven lines in length, by one inch and half a line in breadth; pointed in shape, of a pale greenish white, spotted and speckled particularly over the broad end with dark reddish brown. This rare egg was given me by Richard Dann, Esq., who obtained two or three in Norway, with the eggs of some other very rare birds to be hereafter referred to.

M. Nilsson says the Wood Sandpiper is found occasionally in Sweden, inhabiting swampy woods during summer; and there is no doubt that this bird breeds every season as far north as the Arctic circle, both in Norway and Lapland. The food consists of worms and insects; and Mr. Hoy told me he had seen it perch on the upper twigs of a bush, which appears to be the habit of the Redshank and some others of the same genus.

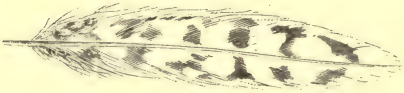
The Wood Sandpiper is found in some of the provinces of Germany, but only a few of these birds are seen in Holland or France, and then in woody marshes. It is seen in Provence, at Genoa, in Italy, and in Sicily. Dr. Calvert gave me a specimen which he obtained in Malta. Mr. Selby mentions having seen specimens from the Cape of Good Hope; and Dr. Andrew Smith also brought specimens from South Africa. In the extensive collection of Sir William Jardine, Bart. I saw skins of this bird which had been received from India, and Colonel Sykes and Major Franklin also brought specimens from different parts of India. The *Totanus affinis* of Dr. Horsfield, included among the birds of Java, is considered to be our Wood Sandpiper; and Mr. Gould mentions having seen skins of this bird from Chili and the Islands of the Pacific.

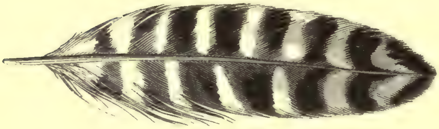
This bird is a little smaller than the Green Sandpiper; the beak greenish black, except at the base of the lower mandible, which is pale brown; the irides dusky brown; from the base of the upper mandible to the eye a dusky patch; over that and over the ear-coverts a white streak; the top of the head, and back of the neck, wing-coverts, and tertials, greenish brown, each feather with buffy white spots on the margin, some of which are triangular in shape, others more elongated; primaries uniform greenish black; upper tail-coverts white: tail-feathers with six or more narrow transverse white bars, on a ground colour of greenish black; chin white; sides of the neck, throat, and breast, streaked downwards with ash brown lines on a ground of dull greyish white; belly, vent, and under tail-coverts white; sides, axillary plume, and under wing-coverts white, with a few transverse dusky bars; legs, toes, and claws, olive green.

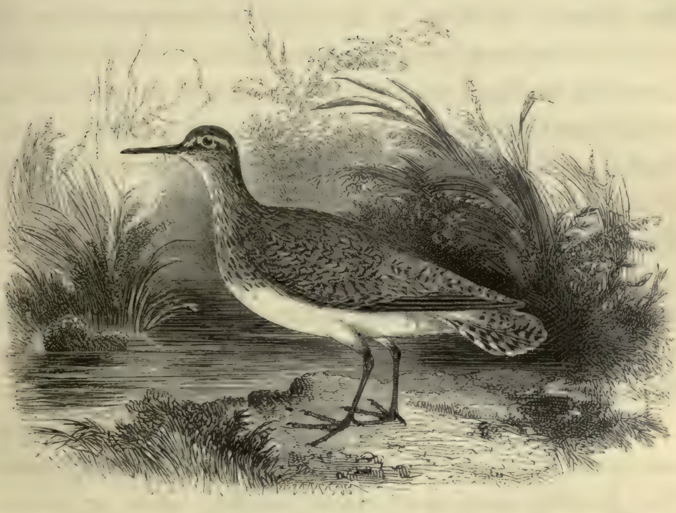
The whole length not quite nine inches. From the carpal joint to the end of the first quill-feather, which is the longest in the wing, five inches.

Some specimens of these birds in the collection of Richard Dann, Esq., obtained in Norway in the breeding-season, have the streaks and lines on the neck and breast, and the feathers on the back and wings so black in colour, and extending over so large a space in each feather, as to exhibit but little of the light-coloured spotting observed in the plumage of the specimens generally obtained in this country, and give the bird something of the dark appearance of the Spotted Redshank, figured at page 587.

Beneath are representations of a feather from the axillary plume and middle of the tail in the Wood Sandpiper.







THE COMMON SANDPIPER,

OR SUMMER SNIPE.

Totanus hypoleucos.

Tringa	*hypoleucos,*	*Common*	*Sandpiper,*	Penn. Brit. Zool. vol. ii. p. 90.
"	"	"	"	Montagu, Ornith. Dict.
"	"	"	"	Bewick, Brit. Birds, vol. ii. p. 101.
Totanus	"	"	"	Flem. Brit. An. p. 104.
"	"	"	"	Selby, Brit. Ornith. vol. ii. p. 81.
"	"	"	"	Jenyns, Brit. Vert. p. 199.
"	"	"	"	Gould, Birds of Europe, pt. xiii.
"	"	*Chevalier guignette,*		Temm. Man. d'Ornith. vol. ii. p. 657.

The Common Sandpiper is a summer visiter to this country, appearing in April, leaving us again by the end of September, and is very generally known by the name of the Summer Snipe. Mr. Thompson sends me word that this bird is also a regular summer visiter to Ireland. It is common in Wales, not uncommon in Cornwall, and is found in

Devonshire, Dorsetshire, Hampshire, Kent, Essex, and the north-eastern counties to Durham, and Northumberland. Dr. Fleming mentions it as a constant summer visiter to the most northern parts of the mainland of Scotland; but according to Mr. Low, Dunn, and others, it is not found in Orkney and Shetland. Mr. Selby says, "it is very abundant upon the shores of the Scottish fresh water lakes, and upon Loch Awe in July, when the young broods begin to fly, I have at one view seen three or four families on the wing, crossing over or skimming along the edges of the lake." Mr. Selby also observed this species very abundant upon the margins of all the numerous locks and rivers in Sutherlandshire.

The habits of this Sandpiper are interesting, its actions are lively, and it is mostly seen while running nimbly along the gravelly margins of rivers, brooks, lakes, or ponds. When on the ground it is in constant motion, flirting the tail up and down, and almost as frequently stretching out, and again withdrawing the head and neck. When disturbed and flushed, this bird utters a piping note on taking wing, which has been compared by Colonel Sykes to the sounds, *wheet*, *wheet*, *wheet*; and Mr. Selby says, that from the resemblance to its well-known note one of the provincial names of this species is Willy Wicket.

The food of this Sandpiper is worms and insects. It is seldom seen on the sea-shore. It makes a slight nest of moss and dry leaves in a hole on a bank near fresh water, generally under shelter of a bunch of rushes or a tuft of grass, and sometimes in a corn-field, if it happens to extend near enough towards the water. The eggs are four, reddish white in colour, spotted and speckled with umber brown; one inch four lines in length, by one inch in breadth. If disturbed during the period of incubation, Mr. Selby observes, the female quits the nest as quietly as possible, and usually flies to a distance, making at this time no outcry; as soon, however, as the young are hatched, her manners completely alter, and the greatest agitation is expressed on the apprehension of danger, and every stratagem is tried, such as feigning lameness, and inability of flight, to divert the attention of the intruder from the unfledged brood. A writer in the vicinity of Clitheroe, in Lancashire, says,* "The Common Sandpiper breeds with us; and I this year started an old one from her nest, at the root of a fir tree. She screamed out, and rolled about in such a manner, and seemed so completely disabled, that, although perfectly aware that her intention was to allure me from her nest, I could not resist my inclination to pursue her, and, in consequence, I had great difficulty in finding the nest again. It was built of a few dried leaves of the Weymouth pine, and contained three young ones, just hatched, and an egg, through the shell of which the bill of the young chick was just making its way; yet, young as they were, on my taking out the egg to examine it, the little things, which could not have been out of their shells more than an hour or two, set off out of the nest with as much celerity as if they had been running about a fortnight. As I thought the old one would abandon the egg if the young ones left the nest, I caught them again, and covering them up with my hand for some time, they settled down again. Next day all four had disappeared." The adult Sandpiper can swim and dive well, however inapplicable to such a purpose the feet of this little bird may appear to be; and Mr. Selby mentions, that the young too, when three weeks or a month old, just before they are able to fly, if discovered and attempted to be caught, boldly take to the water, diving repeatedly, and to a considerable distance; a provision wisely granted, as being so well adapted to insure their safety in the unfledged state. The authors of the catalogue of the Norfolk and Suffolk Birds, say, "Some years since we saw a Sandpiper flying across a river attacked by a hawk, when it instantly dived, and remained under water until its enemy disappeared. It then emerged, and joined its companions. This bird when flushed, sometimes utters a note resembling, as near as possible, that of the Kingfisher." Montagu says, having shot at and winged one of this species as it was flying across a piece of water, it fell, and floated towards the verge, and as we reached to take it up, the bird instantly dived, and we never saw it rise again to the surface. A correspondent in a midland county, writes me word, that he has seen this bird perch occasionally upon projecting roots and stumps of trees by the river side; that when diving, it uses its wings under water the same as in flying; and on one occasion when he had shot at, and slightly wounded, a bird that fell about twenty yards on the opposite side of a brook, no sooner was it down than it turned back, and made direct for the water as still affording the chance of escape.

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* Magazine of Natural History, vol. vi. p. 148.

M. Nilsson says this species is common in Scandinavia from April to August. Linnæus, in his Tour in Lapland, mentions having found a nest with four eggs near the water side at Flaskesele, in Lycksehe Lapland, on the 31st of May 1732, old style. This species is also known to visit the west coast of Norway, the Faroe Islands, Iceland, and Greenland.

The Common Sandpiper is seen over the greater part of Europe from the spring till its autumn migration, when it goes southward, and is observed in Provence, Italy, Sicily and Malta. The Zoological Society have received specimens from Tangiers; and Mr. Fellows mentions having shot specimens at Xanthus, in Asia Minor. Colonel Sykes, Major Franklin, B. Hodgson, Esq., and Mr. Blyth, have found specimens in different parts of India. Dr. Horsfield includes it in his catalogue of the Birds of Java, and M. Temminck says that the great numbers of this species killed at Java, Sumatra, at Timor, and Japan, proves that it is there a migratory bird over these islands. This species is not found on the Continent of North America, though it has been sometimes so stated.

The beak of the Common Sandpiper is dark brown towards the point, pale yellow brown at the base; the irides dusky brown; from the beak to the eye a brown streak, over that, over the eye, and over the dark coloured ear-coverts, a light coloured streak; the top of the head, back of the neck, the whole of the wing-coverts, the back, upper tail-coverts, and the four central tail-feathers, greenish brown, with a dusky greenish black stripe across the centre, and along the line of the shaft of each feather; wing primaries almost black, with a greyish white patch on the inner web of all but the first; the secondaries tipped with white; the tail graduated, the central feathers being the longest, and all twelve barred with greenish black; the four outer tail-feathers on each side tipped with white; the two outer tail-feathers on each side with the outer webs white, barred with greenish black; the chin white; the sides of the neck and the upper part of the breast streaked with dusky black, on a ground colour of pale ash; the lower part of the breast and all the other parts of the under surface of the body of a delicate and uniformly unspotted white, hence the systematic specific name of the bird; the legs and toes, ash green; the claws, brown.

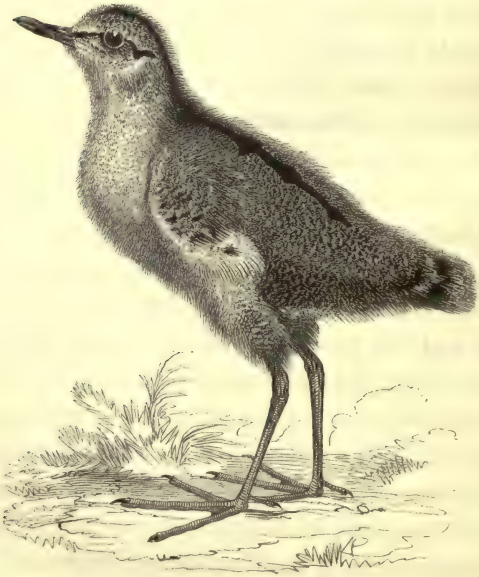
The whole length of the bird seven inches and a half.

From the carpal joint to the end of the wing, four inches and one-quarter; the first quill-feather the longest.

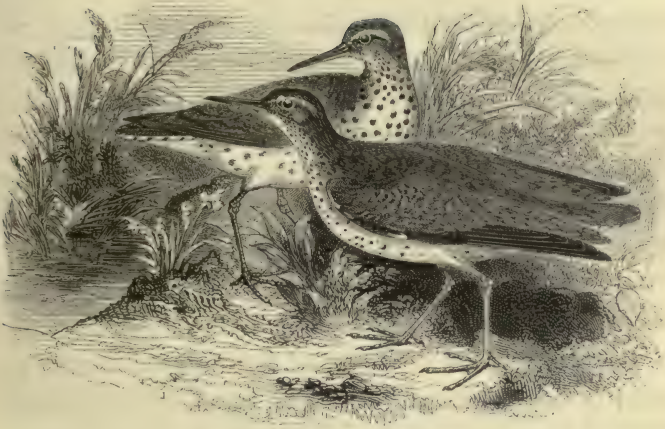
Young birds of the year have the front of the neck white, with dark streaks on the sides only; the white streak over the eyes more conspicuous; the wing-coverts darker in colour; the feathers on the back edged with reddish buff, spotted with black.

The chick soon after leaving the egg has all the upper surface of the body covered with down of an ash-brown colour, with a black stripe on the head, nape, and down the back; the under surface of the body greyish white; the legs pale green.

For the means of figuring the young bird in this state, I am indebted to the kindness of T. C. Heysham, Esq., of Carlisle.



GRALLATORES. *SCOLOPACIDÆ.*



THE SPOTTED SANDPIPER.

Totanus macularius.

Tringa	*macularia,*	*Spotted*	*Sandpiper,*	PENN. Brit. Zool. vol. ii. p. 79.
,,	,,	,,	,,	MONTAGU, Ornith. Dict. and Supplt.
,,	,,	,,	,,	BEWICK, Brit. Birds, vol. ii. p. 105.
Totanus	,,	,,	,,	FLEM. Brit. An. p. 103.
,,	*macularius,*	,,	,,	SELBY, Brit. Ornith. vol. ii. p. 84.
,,	,,	,,	,,	JENYNS, Brit. Vert. p. 199.
,,	,,	,,	,,	GOULD, Birds of Europe, pt. viii.
,,	*macularia,*	*Chevalier*	*perle,*	TEMM. Man. d'Ornith. vol. ii. p. 656.

THE SPOTTED SANDPIPER has hitherto been included in our catalogues and histories of British Birds, on the authority of Edwards and Bewick; but believing with Mr. Selby, the Rev. Mr. Jenyns, and others, that the birds from which Edwards and Bewick drew their representations, were only specimens of our Common Sandpiper, *Totanus hypoleucos*, the species last described, I had intended not to have included the *Totanus macularius* in the present work. It will be recollected that Montagu states in his Supplement that he had never met with this species.

Mentioning this intention to my friend Mr. Heysham during his recent visit to London, he immediately told me that on his route from home he had visited Norwich, and had seen in the collection of J. H. Gurney, Esq., the Banker of that city, a British killed specimen of the Spotted Sandpiper, an adult bird, which had been received in the flesh, and preserved for him by Mr. George Johnson of Norwich.

Mr. J. H. Gurney, with whom I have had the pleasure of being acquainted some years, no sooner knew my wishes on the subject, than he requested Mr. Johnson to send me notice of the place and time of the capture of the recently killed *Totanus macularius*, and the following is an extract from Mr. George Johnson's obliging communication.

"The Bird in question came *to me in the meat.* It was shot between Runton and Sherringham on the north east coast of Norfolk, in company with a flock of the Common Sandpiper, five or six of which came into my hands with it. It was killed about the 26th of September, 1839 ; the birds were bought by a friend residing at Cromer, about four miles from Sherringham, who sent them to me not being aware that any of them were scarce or at all valuable. Your friend Mr. Gurney saw the bird immediately after I had skinned it, and I am extremely happy to afford you any information of the first British specimen of the Spotted Sandpiper that has come to your notice."

M. Nilsson, in his Fauna of Scandinavia, says that this bird comes often into the North of Europe, and that specimens have been killed in the south of Sweden, on the islands in the Baltic, and in Gottland. M. Temmick states that it has been killed in Germany and on the banks of the Rhine, but not in Holland. Messrs. Meyer and Wolf, and M. Brehm include it in their Birds of Germany.

The Spotted Sandpiper is a common bird in the United States,* where, however, it is only a summer visiter, going southward in October. During the breeding season it inhabits the banks of rivers and lakes, where its actions, habits and food, are observed to accord so closely with those of our Common Sandpiper in this country, as to make quotation from American authorities unnecessary. One extract from Mr. Audubon's Ornithological Biography I hope to be excused from copying, because it refers to a power possessed by birds, which has been doubted; that of being able to move their eggs when danger threatens. "My esteemed friend Thomas Macculloch of Pictou, Nova Scotia, having transmitted to me a curious account of the attachment of one of these birds to her eggs, I here insert it with pleasure. Being on an excursion to the Hardwood Heights, which rise to the west of Pictou, my attention was attracted by the warble of a little bird, which appeared to me entirely new, and which proceeded from a small thicket a short way off. Whilst crossing an intervening meadow, I accidentally raised a Spotted Sandpiper from its nest, and having marked the spot I hastened forwards; but the shyness of the object of my pursuit rendered all my efforts unavailing, and returning to the nest I had just left, I expected to find it still unoccupied; but the Sandpiper had again resumed her place, and left it with great reluctance on my near approach. The nest contained four eggs, which I determined to remove on my return at night, and for the purpose of preventing the bird sitting again upon them, I placed a number of stones in a slanting position over the nest, and so close that it was impossible for the bird to get into it. On my return in the evening, however, I observed the little creature rise from beside the stones apparently in greater trepidation than ever, and more anxious to draw me away by the exhibition of all those little arts which they practise for this purpose. On examining the spot I was very much surprised to find that the poor thing had not only hollowed out a new nest, but had actually succeeded in abstracting two eggs from the other nest. How the bird had contrived to remove the eggs I cannot conceive, as the stones remained unaltered. This attachment to its nest and eggs appeared to me more singular as the bird had but just commenced incubation, the eggs exhibiting very little appearance of the young."

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* Mr. Audubon says this species has a very extensive range; from Labrador even to Texas.

Two eggs of the Spotted Sandpiper, given me by Mr. Audubon, very closely resemble those of our Common Sandpiper, being about one inch four lines long, by one inch in width; of a pale reddish white, spotted and speckled with ash grey, and two shades of reddish brown.

This bird is smaller than our Common Sandpiper, but so like it in the general colour and markings of the plumage on the upper surface of the body, that the distinctions only need be noticed. The beak is shorter and paler in colour both at the point as well as at the base; the dark streak on the feathers of the back seems more confined to the transverse direction, and is not so often conspicuous down the line of the shaft of the feather; the secondaries are tipped with white as in the Common Sandpiper, but the feathers are longer; in the tail five feathers on each side have white tips, and only one feather on each outside of the tail has the outer web white, barred with greenish black; the chin white; the throat, neck, breast, and all the under parts, even to the ends of the under tail-coverts white, but ornamented with numerous well defined round spots of dusky greenish brown ; the legs and toes, flesh colour ; the claws, brown.

The whole length about six inches and three-quarters. From the carpal joint to the end of the wing four inches ; the first quill-feather the longest in the wing.

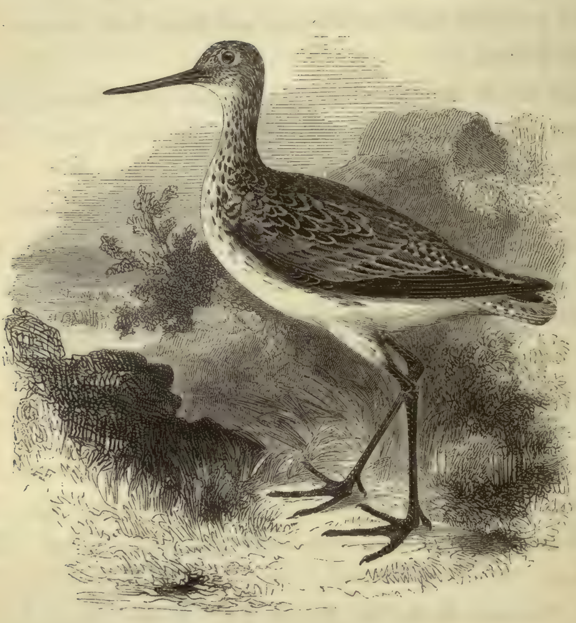
The whole length measurement assigned by M. Temminck in his Manual for *Totanus hypoleucos*, is seven inches three lines, French ; that for *Totanus macularius* eight inches, French ; surely this last must be a misprint. I have never seen a specimen of *T. macularius* that approached to eight inches, and all authors agree that *T. hypoleucos* is the larger bird of the two.

The young chicks on leaving the shell are covered with down of a dull drab colour, marked with a single streak of black down the middle of the back, and with another behind the ear.

M. Temminck, in the fourth Part of his Manual, page 418, says, " the young of the year of this species are easily distinguished from those of the Common Sandpiper, because the under parts always bear some indications of the brown oval shaped spots disposed over the breast and belly, notwithstanding these spots do not appear till the winter season ; in the early part of autumn the under parts are wholly white."

This Spotted Sandpiper, *Totanus macularius*, of Temminck, must not be confounded with the *Totanus maculatus* of Bechstein, which is only another systematic name for our Spotted Redshank, figured at page 587.

GRALLATORES. *SCOLOPACIDÆ.*



THE GREENSHANK.

Totanus glottis.

Scolopax glottis,	*The Greenshank,*	**Penn.** Brit. Zool. vol. ii. p. 55.
" *canescens,*	*Cinereous Godwit,*	" " " " 50.
" *glottis,*	*The Greenshank,*	**Montagu,** Ornith. Dict.
" "	" "	**Bewick,** Brit. Birds, vol. ii. p. 71.
" *canescens,*	*Cinereous Godwit,*	" " " " 68.
Totanus glottis,	*The Greenshank,*	**Flem.** Brit. An. p. 104.
" "	" "	**Selby,** Brit. Ornith. vol. ii. p. 86.
" "	" "	**Jenyns,** Brit. Vert. p. 200.
" "	" "	**Gould,** Birds of Europe, pt. xv.
" "	*Chevalier aboyeur,*	**Temm.** Man. d'Ornith. vol. ii. p. 659.

The Greenshank is not very numerous as a species, and like the Green Sandpiper, the Wood Sandpiper, and the Summer Snipe, may be considered rather as a summer visiter, but is most frequently seen and obtained about the periods of their vernal and autumnal migration, on their passage to and from those northern localities in which they pass their breeding season. They are to be found most frequently in the London market towards the end of April and in May, their plumage then exhibiting to some extent the darker streaks and spots which mark their summer dress. In Ireland they are seen in autumn, Mr. Thompson informs me, in very small parties, but generally singly; and they are recorded as having been killed in autumn, and sometimes early in winter, in the counties along the line of our southern coast. These birds are occasionally met with in inland counties. Mr. Jesse sent me notice of one that was killed near Ascot Heath, not far from the house of Mr. Davis, the well known hunstman of her Majesty's stag hounds; and Rusticus has mentioned one that was shot near Godalming. Specimens have also been killed in Cambridgeshire, Norfolk, and Lincolnshire. In the vicinity of Carlisle, Mr. Heysham says that during the month of August 1832, three or four of these birds were occasionally seen on Brugh, and Rockcliff salt marshes, and on the 25th a young male and female were procured. These two birds had been feeding upon Smelts and Shrimps. A third specimen, which was killed about ten days earlier in the same month, on the banks of the river Eden, near Botchardby, had recently swallowed a bearded Loche.

Mr. Macgillivray furnished the following notice of the habits of the Greenshank as observed in the Hebrides to his friend Mr. Audubon.* The Greenshank is seen in the outer Hebrides early in spring, and generally departs in October, although I have observed individuals there in November. Previous to the commencement of the breeding season, and after the young are fledged, it resorts to the shores of the sea, frequenting pools of brackish water at the head of the sandfords, and the shallow margins of bays and creeks. Its habits are very similar to those of the Redshank, with which it associates in autumn. It is extremely shy and vigilant, insomuch that one can very seldom shoot it, unless after it has deposited its eggs. Many individuals remain during the summer, when they are to be found by the lakes in the interior, of which the number in Uist, Harris, and Lewis is astonishing. At that season it is very easily discovered, for when you are perhaps more than a quarter of a mile distant, it rises into the air with clamorous cries, alarming all the birds in its neighbourhood, flies round the place of its nest, now wheeling off to a distance, again advancing towards you, and at intervals alighting by the edge of the lake, when it continues its cries, vibrating its body all the while. I once found a nest of this bird in the island of Harris. It was at a considerable distance from the water, and consisted of a few fragments of heath and some blades of grass, placed in a hollow cavity scraped in the turf, in an exposed place. The nest, in fact, resembled that of the Golden Plover, the Curlew, or the Lapwing. The eggs placed with their narrow ends together, were four in number, pyriform, larger than those of the Lapwing, and smaller than those of the Golden Plover, equally pointed with the latter, but proportionally broader and more rounded at the larger end than either. The dimensions of one of them, still remaining with me, are two inches exactly, by one inch and three eighths: the ground colour is a very pale yellowish green, sprinkled all over with irregular spots of dark brown, intermixed with blotches of light purplish grey, the spots, and especially the blotches, more numerous on the larger end. Although in summer these birds may be seen in many parts of the islands, they are yet very rare, a pair being to be met with only at an interval of several miles. In other parts of Scotland they are seen chiefly in autumn, but are of rare occurrence. Mr. Selby, when in Sutherlandshire, in June 1834, says of this bird; "We detected this species breeding in various parts of the country, generally in some swampy marsh, or by the margin of some of its numerous lochs. It is very wild and wary, except when it has tender young, at which time, when first disturbed, it sometimes approaches pretty near, making a rapid stoop like the Redshank at the head of the intruder. If fired at and missed, which is frequently the case even by a good marksman, as the stoop is made with remarkable rapidity, it seldom, at least for that day, ventures again within range. A pair which had their nest in a marsh near Tongue, after having been once fired at, could not again be approached; but we obtained one of the young, apparently about a fortnight old, by means of a water dog. Another pair were shot near Scourie, by the margin of a small loch, where, from their violent outcries and alarm, they evidently had their nest or young, though we were unable to find either." The Greenshank was observed by Mr. Hewitson and his friends when in Norway, and, to their great surprise, was seen more than once seated above their heads on the top of a tall tree. Muller and M. Nilsson include it as a summer visiter to Denmark and Sweden; and from the state of the plumage of several specimens in the collection of Richard Dann, Esq., obtained in the northern part of Scandinavia, there is no doubt that this species breeds every season as far north as the Arctic circle, in Lapland. Their note sounds like, *chio*, *chio*.

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* Ornithological Biography, vol. iii. p. 483.

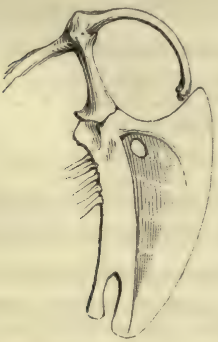
They feed on small fish, worms, insects, besides crustaceous and molluscous animals.

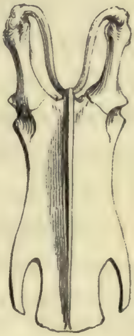
This bird visits Russia, and has been found in Germany, on the banks of the Rhine; is occasionally obtained in Holland, but only seen on its passage in France, Provence, Switzerland, and Italy. It is observed also in spring and autumn at Corfu, Sicily, Malta and Crete. Mr. Strickland says it visits Smyrna in winter, and he obtained a specimen, but it was considered rare. The Zoological Society have received specimens from Trebizond, by favour of Keith Abbott, Esq. M. Julian Desjardins communicated to the Zoological Society, in 1833, a description of this bird taken from a specimen killed in Mauritius: the bird not being known to have previously occurred in the island. There is but little doubt that the species found in various parts of Asia, and described under the term *glottoides*, is our Greenshank. Dr. Horsfield includes the Greenshank in his catalogue of the Birds of Java; and M. Temminck remarks, that the examples of this bird received by him from the island of Sunda, and the Moluccas, in every respect resemble those of Europe, but are always in the plumage of winter. Montagu, in his Ornithological Dictionary, said that this bird had been observed in America, in the province of New York; and Mr. Audubon has since found it in Florida.

The beak of the Greenshank is about two inches long, nearly black, and very slightly curved upwards; the irides hazel; the upper part of the head, the cheeks, the neck on the sides and behind, marked with well defined dark lines, on a ground colour of greyish white; the back, wing-coverts, and tertials, ash brown, edged with buffy white; quill-primaries uniform dusky black; tail-feathers white, those in the middle barred transversely, the outer feathers striped longitudinally with ash brown; chin white; front of the neck to the breast, and the sides, under the wings, white, slightly marked longitudinally with ash colour; breast, belly, vent, and under tail-coverts, pure white; legs and toes, olive green; claws, black. The specimen from which our figure was taken was killed at the beginning of May; the dark streaks and spots on the neck are well defined, and almost black; the centre of some of the feathers on the back, is in change to greenish black, which is the prevailing tint on the upper surface of the body when the plumage of the breeding season is confirmed, and the light-coloured margins of the greater wing-coverts, and the tertials especially, are varied with dark spots. The more uniform ash grey is the plumage of winter; the well-defined dark lines and spots assumed in summer, are not produced by any partial moulting, or the production of new feathers, but by an alteration in the colour of the old feather.

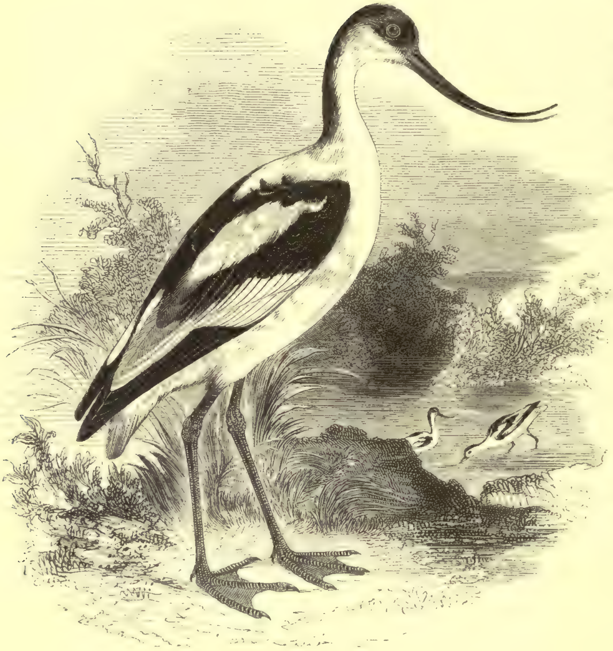
The whole length of the adult Greenshank is about twelve inches; from the carpal joint to the end of the wing seven inches; the first quill-feather the longest.

The representation below is from the skeleton of the Common Sandpiper, and exhibits the form of the breast bone in the species of the genus *Totanus.*





GRALLATORES. *SCOLOPACIDÆ.*



THE AVOCET.

Recurvirostra avocetta.

Recurvirostra avosetta, The Avoset,	Penn. Brit. Zool. vol. ii. p. 143.
" " " "	Montagu, Ornith. Dict.
" " " "	Bewick, Brit. Birds, vol. ii. p. 124.
" *avocetta Scooping,* "	Flem. Brit. An. p. 101.
" " " "	Selby, Brit. Ornith. vol. ii. p. 90.
" " " "	Jenyns, Brit. Vert. p. 201.
" " *The* "	Gould, Birds of Europe, pt. iv.
" *Avocette à nuque noir,*	Temm. Man. d'Ornith. vol. ii. p. 590.

Recurvirostra. *Generic Characters.*—Beak very long, slender, weak, depressed throughout its whole length, flexible, pointed and curving upwards; the upper mandible grooved along the upper surface; under mandible grooved along the side. Nostrils on the upper surface of the beak, near its base, linear, long.

Legs slender, long, great portion of the tibia naked; three toes in front, hind toe small, articulated high up on the tarsus, the anterior toes united as far as the second articulation, by a membrane, the margin of which is concave. Wings pointed; the first quill-feather the longest in the wing.

THE AVOCET is certainly a singular looking bird; both in reference to its beak as well as its feet; but it is also as handsome as it is singular. The beak is curved upwards, is slender, pointed and flexible, having very much the appearance of a thin piece of elastic whalebone, and is, to the bird, I have no doubt, a delicate organ of touch; while the semi-palmated feet seem only intended to support the bird on soft mud, as it never attempts to paddle or swim when out of its depth, but allows itself to float along motionless. This bird is apparently more rare now than formerly. Sir Thomas Browne says they were not uncommon in his time in the marshy lands of Norfolk, and some years ago I was told that more than twenty specimens were received at Leadenhall market for sale within one month; but now scarcely an example appears once in a year: the last I heard of was in the spring of 1837.

Mr. Thompson says it is a very rare visiter to Ireland; one or two have been killed in Cornwall, and they were noticed formerly in Gloucestershire and in Shropshire. Four are recorded as having been obtained in Devonshire; one or two in Dorsetshire. Mr. Markwick, in his catalogue of the Birds of Sussex, printed in 1795, says, this bird is not uncommon on our sea-coast in summer; but whether it is to be found here in winter I cannot tell, as I do not recollect to have ever seen it at that season. That it breeds here I have been an eye-witness, for I remember that several years ago, I found in the marshes near Rye a young one of this species, which appeared to have been just hatched, and I took it up in my hands, whilst the old birds kept flying round me. I have also seen it in the summer on the sea-coast at Bexhill.

They formerly visited Romney Marsh, but I find no record of them there at present; they are also rare now in Norfolk. The authors of the catalogue of Norfolk and Suffolk Birds, say, that during the breeding season the Avocet used to frequent the marshes at Winterton; and in the summer of 1816 we saw one there which had young. This bird made several circles round us, uttering a shrill note, and then alighted in the middle of a pool of water, on which it floated; then took several turns on wing, and again alighted on the water, where it sat motionless. The bill of the Avocet is so flexible that it is totally unfit for a weapon of offence, and the bird itself has a peculiarly harmless and meek appearance.

W. R. Fisher, Esq. has recorded the occurrence of three specimens of the Avocet in the neighbourhood of the Broads near Yarmouth, in Norfolk, in 1842 and 43; and in reference to these Broads the Rev. Mr. Lubbock says, "At the beginning of the present century, the Avocet used to breed constantly and in considerable numbers at Horsey, but has not done so of late years. On the authority of an old and respectable fen-man, it bred regularly forty years ago near the seven mile-house on the North river; and occurs still sometimes upon Breedon. The last I know of positively in the fens, was a small flock which visited Sutton Broad in 1828. They used formerly to breed at Salthouse near Holt, but are now extinct there; they were much harassed, as their feathers are valuable to make artificial flies with."

A. E. Knox, Esq. of New Grove, Petworth, says, that "at a late period a flock of five Avocets were seen at Pagham harbour, about six miles from Chichester. They were particularly tame; when fired at two were killed and one wounded; the survivors, however, did not attempt to fly away, till the shooter advanced to pick up the dead birds. Two of these Avocets are now in the Chichester Museum; the third, the wounded one, was purchased by Mr. Tuffnell, of Mundham, who placed it in his garden, where it was killed by a cat."—*Zoologist*, vol. i.

Mr. Selby records one that was killed at Hartley in Durham, and Dr. Fleming says it is only an occasional straggler into Scotland.

The food of the Avocet consists of worms, aquatic insects, and the thinner-skinned crustaceous animals which these birds search for on soft mud and sand, occasionally wading deep when at their feed. It is said that the particular marks made by the singular form of the beaks of these birds in the sand while searching for food are recognisable, while their stooping mode of action, and the character of the beak itself, have induced the provincial names of Scooper, and Cobler's-awl Duck. Bewick mentions that when the female is frightened off her nest, she counterfeits lameness, flying round with the legs hanging down and the neck extended, uttering a sound like *twit*, *twit*, repeatedly, from which they are sometimes called Yelpers; but when necessity prompts, the flight is powerful and rapid.

The nest is said to be made in a small hole in the drier parts of extensive marshes; the eggs are said to be only two in number, of a clay coloured brown, spotted and speckled with black, about two inches in length, by one inch and a half in breadth.

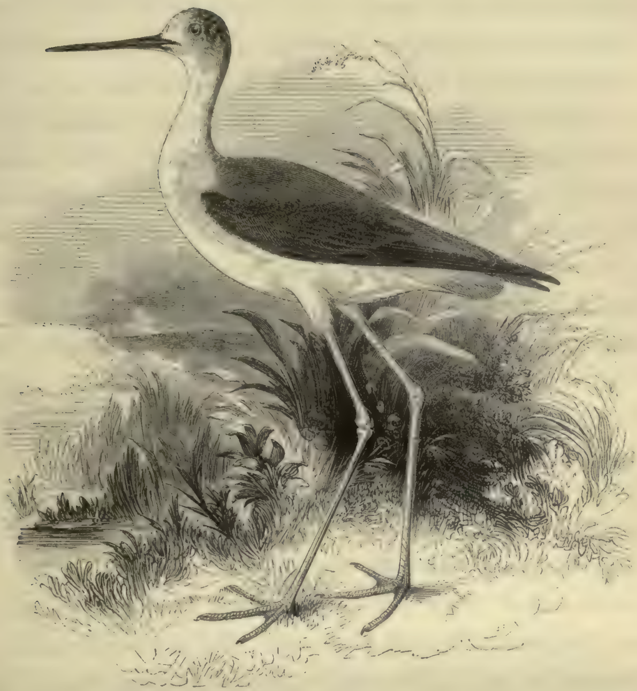
M. Nilsson states that this bird visits Sweden but rarely, yet it is said to breed in Holstein, and the eggs are occasionally brought to this country for sale by dealers from Hamburgh. M. Temminck says that the Avocet is abundant in the North of Holland, but is more rare on the coast, and is seen at the periods of its migrations in Provence, Switzerland, Italy, Corfu, and Sicily. It probably inhabits great part of Africa, since Dr. Andrew Smith has found it as far south as the Cape of Good Hope; it is found also in Egypt and at Smyrna. M. Hohenacker includes it among the birds seen between the Black and the Caspian Seas; and Mr. Selby mentions as a locality for it the salt lakes of Tartary. Our bird is also found in Nepal and Calcutta.

The specimen from which the figure and description here inserted were taken, was obtained in the London market in the spring of 1814. The beak black, about three inches and a half in length, has very much the appearance of two thin flat pieces of whalebone coming to a point and curving upwards; the irides reddish brown; top of the head, occiput, nape, and back of the neck, black; interscapulars and upper part of the back, white; scapulars, lesser wing-coverts, and the wing-primaries, black; all the other parts of the plumage pure white; legs and toes pale blue.

The whole length nearly eighteen inches. From the carpal joint to the end of the wing eight inches and a half; the first quill-feather the longest in the wing.

In young birds of the year the dark-coloured parts of the plumage are tinged with brown; the scapulars edged with reddish brown. During the second year, till the autumn moult, some of the elongated dark feathers are still reddish brown at the end.

GRALLATORES. *SCOLOPACIDÆ.*



BLACK WINGED STILT.

Himantopus melanopterus.

Charadrius himantopus,	*Long-legged Plover,*	PENN. Brit. Zool. vol. ii. p. 100.
,, ,,	,, ,,	MONTAGU, Ornith. Dict.
,,	,, ,,	BEWICK, Brit. Birds, vol. i. p. 374.
Himantopus Plinii,	*Long Legs,*	FLEM. Brit. An. p. 112.
,, *melanopterus,*	*Black winged Stilt,*	SELBY, Brit. Ornith. vol. ii. p. 247.
,, ,,	,, *Long Shanks,*	JENYNS, Brit. Vert. p. 201.
,, ,,	*Long-legged Plover,*	GOULD, Birds of Europe, pt. iii.
,, ,,	*Echasse à manteau noir,*	TEMM. Man. d'Ornith. vol. ii. p. 528.

HIMANTOPUS. *Generic Characters.*—Beak long, slender, cylindrical, flattened at the base, compressed at the point, both mandibles grooved on the sides along the basal half of their length. Nostrils lateral, linear, elongated. Legs very long and slender, three toes in front, the middle toe united to the outer toe by a membrane of considerable size, and to the interior toe by a membrane of smaller size; claws or nails very small, flat. Wings very long, the first quill-feather considerably the longest in the wing.

Sir Robert Sibbald first recorded the Black Winged Stilt as a visiter to these islands from two specimens that were killed in Scotland, and Mr. Don, in his account of the native plants and the animals of Forfarshire, has noticed two others, also killed in Scotland, one on the mountains of Clova, and the other on Ben Lawers in Perthshire. The appearance of this bird, though not unfrequent, is still accidental, and seems to have no reference to any particular season of the year. White of Selborne notices five that were killed out of a flock of six, that visited Frinsham Pond, a large piece of water lying between Wolmer Forest and the town of Farnham, during the last week of April 1779; and Pennant mentions one that was obtained near Oxford. Mr. Thompson of Belfast mentions that one of these birds was seen by Mr. Robert Ball at Youghall, in the winter of 1823. Montagu, in his Supplement, notices one that was killed at Anglesea. It has been obtained in Devonshire, and in Dorsetshire, the latter near Poole. Mr. William Borrer, Jun. sent me word that an adult specimen had been shot near Havant in Hampshire, which had been prepared, and was now in the possession of F. Hopkins, Esq. of Hubborne Lodge, near Christchurch.

Of some specimens killed in Norfolk, the Rev. Richard Lubbock sent me an account as follows. "On the ninth of June 1822, I was returning in the evening from fishing upon Hickling Broad, when a bird of this species flew past the boat within thirty yards. The legs were extended behind, even more in proportion than those of a Heron; the wings were much arched; the flight vigorous and regular; the colour and the length of limb made me guess what it must be. I asked the fenman who was with me what *he* guessed it to be. He considered it a Ruff which had been caught, as is sometimes the case in our marshes by a horsehair snare, and had broken away with it. When I told him that I believed it to be a very rare and valuable bird he wished to go in immediate pursuit; but I over-ruled that, as there was not more than half an hour's light remaining, and the bird, if shot at ineffectually, might leave the country in the night. We searched for it early the next morning and found it precisely in the same place as the evening before. When shot, it was standing in a shallow pool of water mid leg deep, apparently snapping at insects in the air as they buzzed round it. Since then a pair was shot by Mr. Salmon at Stoke Ferry, in the spring of 1826, the female had eggs within her in a forward state; one of these last is now in the collection of Mr. Lombe."

Mr. Gould, who has had opportunities of observing the actions of birds of this genus in Australia, thus writes of them. Although the extreme length of the legs of this bird, as compared with the small size of its body, would seem incompatible with easy carriage and graceful deportment, this in reality is not the case, for I never saw a bird which combined more grace of movement and elegance of appearance than the White-headed Stilt, which I, for the first time, observed near Mr. Edward Uhr's station on the banks of the river Mokai, where it was associated in small flocks of from six to twenty in number, and which by their picturesque appearance as they ran along the margin, and knee-deep in the shallows of the stream, added greatly to the beauty of the scene. They ran about with great celerity, displaying many graceful, lively actions, and were feeding entirely on insects and small shelled snails.

My own specimen, from which the figure and description here given was derived, was obtained in the London market in July 1824, and was sent up for sale from Lincolnshire: while this bird was in the hands of Mr. Leadbeater for preservation, another was received from Norfolk. In the intestines of this last specimen, which I examined, was a species of tape worm, six inches in length, broad, flat, and jointed. T. H. Gurney, Esq. and Mr. W. R. Fisher have each noticed a specimen killed at Yarmouth in May 1842.

Interesting accounts of an American Stilt, with a black neck, will be found in the works of Wilson, Mr. J. J. Audubon, and Dr. Nuttall, with which, in its habits, the European species most likely agrees. Our bird appears to prefer the margins of lakes rather than the sides of rivers: it lays four eggs, which have been figured by Dr. Thienemann, and are represented of a pale blue colour, blotched and spotted with ash green, and dark brown; one inch nine lines in length, by one inch three lines in breadth. Its food consists of aquatic insects.

M. Temminck says this bird is never seen in Holland, but has been taken in Germany. M. Vieillot does not include it in his Birds of France. White of Selborne says that a most accurate observer of nature assured him that he had found it on the banks of the streams in Andalusia. It is seen on its passage at Genoa and Italy in spring, and M. Temminck says that it breeds in Sardinia. Specimens have been brought to this country from South Africa both by Captain Spiller and Dr. Andrew Smith; and again quoting White of Selborne, "Hasselquist says that it migrates to Egypt in the autumn." It is seen in Sicily on its passage northwards in March, and has been known to winter in Malta, remaining there from November till spring. It has been found at Tripoli. The Zoological

Society have received specimens from Trebizond, presented by Keith Abbott, Esq.; and Messrs. Dickson and Ross; and the Russian naturalists, M. Menetries and Hohenacker, found this bird also on the margins of lakes between the Black and the Caspian Seas. Colonel Sykes and Major Franklin brought specimens from different parts of India; B. Hodgson, Esq. includes it among the birds of Nepal. M. Temminck says it is found in Japan, and Dr. Horsfield includes it in his Birds of Java.

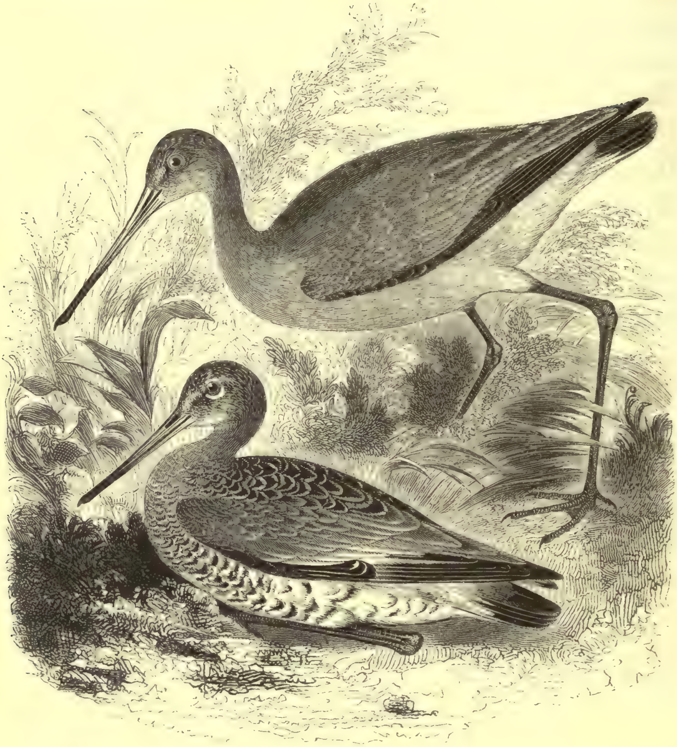
The beak is black; the irides red; the whole of the head, the neck all round, the breast, all the under parts of the body and the tail-feathers white, with a few dusky streaks behind the eyes and on the occiput; the back and wings nearly black, tinged with green; the legs and toes pink.

The whole length about thirteen inches. From the carpal joint to the end of the wing eight inches; the first quill feather the longest.

Females have the black colour on the back less pure, and not tinged with green; the dark streaks about the occiput are more numerous.

Young birds have the feathers of the back and wings brown, edged with white, and more dark feathers about the back of the head; the legs orange.

GRALLATORES. *SCOLOPACIDÆ.*



THE BLACK-TAILED GODWIT.

Limosa melanura.

Scolopax	*Lapponica,*	*Red Godwit Snipe,*	PENN. Brit. Zool. vol. ii. p. 51.
„	*limosa,*	*Jadreka Snipe,*	„ „ „ 53.
„	*Lapponica,*	*Red Godwit,*	MONTAGU, Ornith. Dict.
„	*limosa,*	*Jadreka Snipe,*	„ Supplt.
„	*Lapponica,*	*Red Godwit,*	BEWICK, Brit. Birds, vol ii. p. 66.
„	*limosa,*	*Jadreka Snipe,*	„ „ „ 70.
Limosa	*ægocephala,*	*Black-tailed Godwit,*	FLEM. Brit. An. p. 107.
„	*melanura,*	„ „	SELBY, Brit. Ornith. vol. ii. p. 94.
„	„	„ „	JENYNS, Brit. Vert. p. 203.
„	„	„ „	GOULD, Birds of Europe, pt. xiv.
„	„	*Barge à queue noir,*	TEMM. Man. d'Ornith. vol. ii. p. 664.

LIMOSA.—*Generic Characters.*—Bill very long, rather thick at the base, compressed, slightly curved upwards; both mandibles grooved laterally to within a short distance of the point, which is somewhat dilated and blunt; tip of the upper mandible projecting beyond the lower one. Nostrils basal, placed in the lateral groove, narrow and longitudinal. Wings pointed, of moderate length, the first quill-feather the longest. Legs long and slender, a great part of the tibia naked Feet four-toed, three in front, one behind; the outer toe united by a membrane to the middle toe as far as the first joint, the inner toe nearly free; hind toe short, and articulated upon the tarsus.

GODWITS, of which in Britain there are two species, appear to have been more common formerly than they are at present. Sir Thomas Browne, when writing some of his notes on Natural History, two hundred years ago, says, "Godwits are taken chiefly in marsh-land; though other parts are not without them: they are accounted the daintiest dish in England." This bird was considered an article of luxury in Ben Jonson's time.

> Your eating
> Pheasant and *Godwit* here in London, haunting
> The Globes and Mermaids; wedging in with lords
> Still at the table.
>
> *Dev. an Ass*, iii. 3,

And Thomas Muffet, that "ever famous doctor in physick," as he is called in his title-page, says in "Health's Improvement," page 99, "but a fat *Godwit* is so fine and light meat, that noblemen, yea, and merchants too, by your leave, stick not to buy them at four nobles a dozen." —*Nares's Glossary.*

It is still the practice of some of the fenmen in Lincolnshire to fat a few Godwits on bread and milk with the Ruffs as formerly, when they happen to catch any, and I have seen several within the last five or six years that had been sent up to the London market for sale after having been thus fed and fatted; but though considerably larger than the Ruff, they are not in such high estimation as an article for the table.

The changes in colour our two Godwits undergo in spring, during the gradual assumption of the perfect dress of summer, and the autumnal moult producing again in its turn the plumage of winter—the general similarity in the colours of the two species, and the difference in the size of the two sexes of the same species, the females being considerably larger than the males, led to some confusion in the works of some of the earlier British writers on Birds; but in several of the species of the extensive family of the *Scolopacidæ*, now under consideration, the tail-feathers alone supply good specific distinctions, as shown in the instance of the Green and Wood Sandpipers lately described. The Godwit of the present article may be known at all ages and seasons from the smaller one that here follows it, by the tail-feathers, the terminal two-thirds of which are invariably black; while in the next species the tail-feathers are as invariably barred throughout their whole length with black and white. These permanent distinctions have suggested the names now in use.

The Black-tailed Godwits are most frequently seen in spring and autumn; the first yearly visiters being adult birds on their way to the breeding grounds in high northern latitudes; in the autumn more examples are seen than in spring, but these are mostly young birds of the year going for the first time to their southern winter quarters. A few pairs annually resort to the marshes of Norfolk and the fens of Lincolnshire; but they are rarely permitted to breed unmolested, their large size and peculiar actions being sure to attract the notice both of the sportsman and the egg gatherer. The Rev. Richard Lubbock says, it still breeds occasionally in some of our Norfolk marshes, returning to the same locality, I think, year after year, being found in only two or three situations to my knowledge, near Buckenham ferry, and at Thurne Mouth near Oby.

Its flight in the breeding season resembles that of the Redshank, like which bird it at that time flies round any intruder in the marsh, but in more distant circles and much higher in the air. It is called provincially "Shrieker," but its note, though loud, is far from inharmonious. It becomes more scarce in the breeding season every year. Mr. Hewitson says the Black-tailed Godwits commence laying their eggs early in May. The nest is composed of dry grass and other vegetables, and is concealed amongst the coarse herbage of the swamps and low meadows. Mr. Hoy mentions, that when disturbed, they are clamorous, flying round and vociferating the cry of *grutto*, *grutto*, *grutto*, by which name the bird is known among the country people in Holland. The eggs are four in number, of a light olive brown, blotched and spotted with darker brown, the length two inches two lines by one inch six lines in breadth, and rather pear-shaped. The food of these birds consists of insects and their larvæ, worms, and almost any other soft bodied animals.

The Black-tailed Godwit is only seen in Ireland occasionally in autumn, as I learn from my friend, Mr. W. Thompson. It has been obtained in Devonshire; I have heard of its having been killed at Cardington in Bedfordshire; and Mr. Bond, who has very kindly furnished me with a list of birds obtained or seen in the vicinity of Kingsbury Reservoir, a large piece of water but a few miles north of London, includes three instances of this species appearing there in spring. Living specimens brought from Holland are frequently to be bought in the London markets, and are amusing pets when kept within a walled garden. This species occurs occasionally in Cambridgeshire, and, as before stated, in Suffolk and Norfolk. Mr. Selby has noticed their appearance in Northumberland, and Mr. Heysham has recorded two occurrences, both during autumn, in the vicinity of the Solway Frith. This bird is found during summer in Denmark, and visits in considerable numbers various parts of Scandinavia, particularly Lapland, and going even as far north as Iceland and Greenland.

On the European Continent it is most frequently seen in spring and autumn. It is well known in Spain, and the Zoological Society have received a male and a female in their winter plumage from Tangiers, where they are said not to be uncommon, besides some specimens from Tunis and other localities in North Africa. In Switzerland, M. Schinz says in his Fauna Helvetica, this species is occasionally seen on its passage, and a pair may sometimes remain there and go to nest, as a bird in perfect summer plumage has been taken. It is seen at Genoa and in Italy in May and August, but most numerous in August on its return from the North. In Sicily it is said to be rare, but more common at Malta when on its passage. It has been found in Tripoli. Messrs. Dickson and Ross sent the Zoological Society a young bird of the year from Trebizond; M. Hohenacker, a Russian Naturalist, includes it among the birds obtained in the vicinity of the Caucasus.

Bryan Hodgson, Esq., includes this Godwit in his catalogue of the birds of Nepal, and Mr. Blyth has obtained it in the vicinity of Calcutta.

M. Temminck says it is found in Japan and on the Isles of Sunda.

This Godwit, in the winter plumage, has the beak black for one-third of its length, the basal portion pale yellowish brown; the irides hazel; before and over the eye a white patch; the whole of the head and neck ash brown; the scapulars, wing-coverts, back, and tertials, ash brown, the coverts and tertials with lighter coloured edges; primary quill-feathers dusky black, the shafts white, with some white at the base of all beyond the second, forming a bar across the wing; basal third of the tail-feathers white, the terminal two-thirds black, except the outer tail-feather on each side, which have a larger proportion of white; chin, breast, and belly, light greyish ash; vent and under tail-coverts white; legs and toes dusky brown, the claws black.

The whole length of a female seventeen inches; of the beak alone four inches. From the carpal joint to the end of the first quill-feather, which is the longest in the wing, nine inches; length of the tarsus three inches; of the naked part above, one inch and three-quarters.

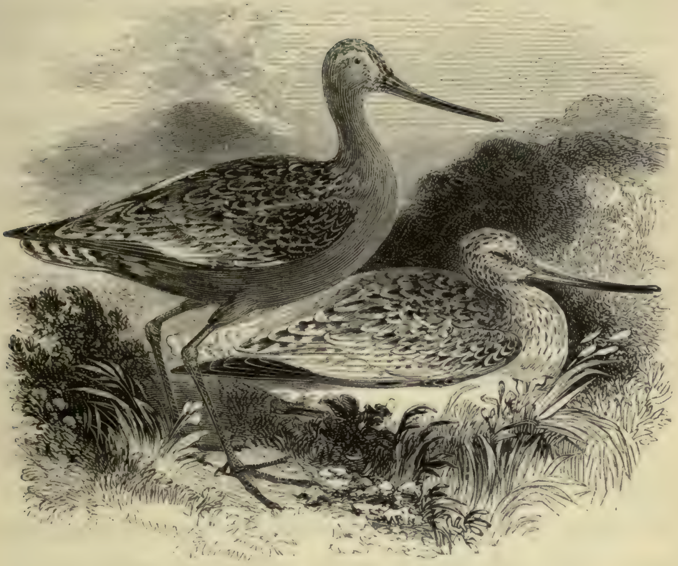
The male in summer has the beak black for half its length from the point, the basal half pale orange; irides hazel; from the gape to the eye a dark streak produced by small black spots on feathers of a reddish brown; over this and around the eye a ring of pale brown; top of the head and the ear-coverts reddish brown streaked with black; the neck all round, before and behind, a reddish fawn colour; the feathers on the back in spring become dark brown, almost black at the base and on the centre; the ends, which were of an ash colour in winter, become rufous by degrees till the darker feathers with reddish margins pervade the whole of the back: the wing-primaries are more decidedly black, the white coloured portion more pure and conspicuous; the tail the same at all seasons; the breast white, barred across with rufous brown and dark brown; the thighs and belly more sparingly barred with dark brown only; vent and under tail-coverts white; legs, toes and claws, brownish black.

Whole length of a male sixteen inches; beak alone three inches and a quarter.

Young birds of the year are during their first autumn tinged with red on the neck, and may be distinguished throughout their first winter from old birds by their smaller size, and by the ash brown tint which pervades their neck and the upper part of the breast: the white of the lower part of the breast is also clouded with ash grey.

In the illustration at the commencement of the account of the Black-tailed Godwit, the figure in the front squatting down represents the male in summer plumage; the larger figure behind is the female in the more uniform and sombre plumage of winter.

In the family of the Plovers the males are the largest; but among the Godwits, Snipes, and Sandpipers, this character is reversed, and the females are the largest.



THE BAR-TAILED GODWIT.

Limosa rufa.

Scolopax ægocephala,	*Godwit Snipe,*	PENN. Brit. Zool. vol. ii. p. 47.
” ”	*Common Godwit,*	MONTAGU, Ornith. Dict.
” *noveboracensis,*	*Red breasted Snipe,*	” Supplt.
” ”	” ” ”	BEWICK, Brit. Birds, vol. ii. p. 61.
” *ægocephala,*	*The Godwit,*	” ” ” ” 64.
Limosa rufa,	*Bar-tailed Godwit,*	FLEM. Brit. An. p. 107.
” ”	*Red* ”	SELBY, Brit. Ornith. vol. ii. p. 98.
” ”	*Bar-tailed* ”	JENYNS, Brit. Vert. p. 202.
” ”	” ” ”	GOULD, Birds of Europe, pt. xv.
” ”	*Barge rousse,*	TEMM. Man. d'Ornith. vol. ii. p. 668.

THE BAR-TAILED GODWIT is in its habits in this country very similar to the Black-tailed Godwit last described, with two exceptions ; the Bar-tailed Godwit very rarely, if ever, remains to breed, and more frequently stops with us through the winter. In Ireland, Mr. Thompson tells me, it is a regular autumnal visitant. Small flocks are occasionally seen in spring, and in the beginning of summer, in Cornwall and in Devonshire, as noticed by Mr. Couch, Dr. Edward Moore, and Mr. Bellamy, and a few are seen in winter. In Romney Marsh, on the Kentish coast, Mr. Plomley says the same occurrences take place. The authors of the catalogue of the Norfolk and Suffolk Birds, say, "We have examined specimens of this bird killed in Norfolk in various states of plumage. Those met with in autumn have been in the dress of the Common Godwit of English authors; but when the individual was killed early in the spring, it was in a state of change between that bird and the Red-breasted Snipe of Montagu."

Some years since many beautiful examples of this species, in various states of plumage, were brought from Yarmouth to London by Mr. Harvey, for sale, from one of which the figure of the male bird, in perfect summer plumage as here represented, standing up, was taken. Mr. Selby includes this species among his Birds of Durham and Northumberland, and Mr. Heysham has recorded one that was shot on the west coast near Bowness in October, but considers it a rare bird.

M. Savi, and other authorities, consider it a very rare bird in Italy. It is only seen on its passage in Switzerland and France. A few are said to breed in the flat marshy parts of Germany, and M. Temminck says that it has bred in Holland. It visits Finland and the countries to the eastward, but is very seldom seen on the islands, or on the western shores of the Baltic; nor in Gottland, nor on the Danish islands west of the Sound.

I believe this Godwit is not found in Lapland, nor do I find it included among the Birds of Iceland or of Greenland in any catalogue, unless it has been confounded with the

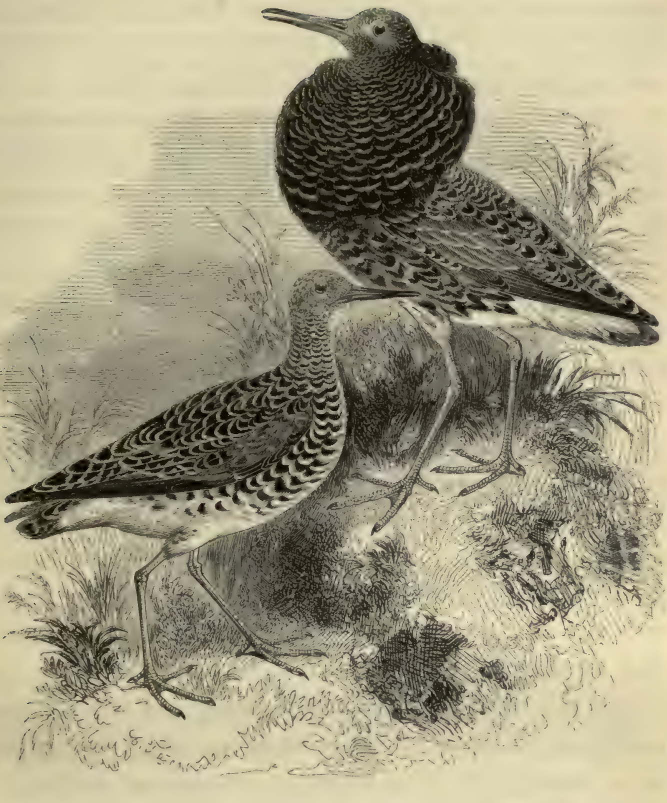
Black-tailed Godwit. It is found on the shores of the Caspian sea; it was obtained by M. Menetries the Russian Naturalist on the scientific expedition to the Caucasus, and M. Temminck says it is found in India, at Java, and Timor.

The egg of this Godwit is figured by Dr. L. Thienemann, and I have in my collection one egg obtained in Yarmouth market, which so exactly resembles the coloured figure of the egg in the work referred to, that I venture to describe its size, colours, and markings, but without any other authority than that I have named for its being the egg of the Bar-tailed Godwit. This egg measures one inch eleven lines in length, by one inch and four lines in breadth, of a pale yellowish wood brown, speckled, spotted, and blotched with clove brown, and umber brown.

The food of this species is aquatic insects, worms, and molluscs. In winter these birds are seen on various parts of our sea coast. At this time of the year the beak is black at the point, the basal portion pale reddish brown; irides dusky brown; top of the head, and back of the neck, ash brown, each feather with a central streak of darker brown along the line of the shaft; back, and scapulars, dark brown, edged with pale wood brown; all the wing-coverts, secondaries and tertials, dark brown, with greyish white edges; primary quill-feathers dusky black, with white shafts, the shorter ones edged with white; rump, and upper tail-coverts white, barred with brown; tail-feathers barred throughout their whole length with dark brown, and greyish white in nearly equal breadth; neck in front, ash brown; breast, belly, and vent, white; under tail-coverts white, with only one or two transverse bars of brown towards the end; legs, and toes, dark blue, the claws black.

A female, which, as in the Black-tailed Godwit, is larger than the male, measured sixteen inches; the length of the beak, three inches and three-quarters; from the carpal joint to the end of the first quill-feather, which is the longest, eight inches and a half. The legs of this species are much shorter in proportion to the size of the bird than those of the Black-tailed Godwit, and become another mark of distinction. In the female described, the tarsus measured but two inches in length, and the naked part of the tibia above it only one inch.

A male, apparently in the perfect plumage of summer, killed during the second week of May 1821, has the beak nearly black, reddish brown at the base; irides dusky brown; head and neck rich bay, or chestnut red, the feathers on the forehead, top of the head, and down the back of the neck, streaked longitudinally with black: the space between the base of the beak and the eye, and the feathers forming the ear-coverts, spotted with black; the upper part of the back, the shoulders, lesser wing-coverts and tertials, black, the edges of the feathers of a pale reddish wood brown; greater wing-coverts, as in winter, dark brown edged with greyish white; primary quill-feathers almost black, those nearest the secondaries tinged with dusky brown on the inner webs, and edged with white; lower part of the back white, with a few small feathers of a dark colour intermixed; upper tail-coverts barred with black, on a ground colour of pale reddish brown; tail-feathers nearly as in winter, but the white is tinged with bay; neck in front, breast, belly, vent, and under tail-coverts, nearly uniform rich bay, with a few dark streaks before the carpal joint of the wing; legs, toes, and claws, nearly black.



THE RUFF.

Machetes pugnax.

Tringa pugnax,	*The Ruff,*	**Penn.** Brit. Zool. vol. ii. p. 71.
" "	" "	**Montagu,** Ornith. Dict.
" "	" "	**Bewick,** Brit. Birds, vol. ii. p. 79.
" "	" "	**Flem.** Brit. An. p. 110.
Machetes "	" "	**Selby,** Brit. Ornith. vol. ii. p. 130.
Tringa "	" "	**Jenyns,** Brit. Vert. p. 207.
Machetes pugnax,	" "	**Gould,** Birds of Europe, pt. x.
Tringa "	*Becasseau combatant,*	**Temm.** Man. d'Ornith. vol. ii. p. 631.
Machetes "	*Combatant variable,*	" Supplt. pt. iv. p. 411.

MACHETES. *Generic Characters.*—Bill straight, rather slender, as long as the head, with the tip dilated and smooth; upper mandible laterally sulcated for four fifths of its length; culmen rounded. Nostrils basal, lateral, linear, placed in the commencement of the groove. Wings long, and pointed, with the first and second quill-feathers of equal length, and the longest in the wing. Legs long and slender, the tibia naked for a considerable space above the tarsal joint. Feet four-toed; three before and one behind; the outer toe united to the middle one by a membrane as far as the first joint; the inner toe free; hind toe short, articulated upon the tarsus, with the tip of the claw barely touching the ground. In plumage, the head and neck of the male, during the breeding season, are adorned with long plumose feathers springing from the occiput and throat; which, when raised, form a large ruff or shield around the head; and the face of the male bird, during the same period, is covered with small fleshy warts or papillæ. *Selby.*

THE RUFF differs in so many points from the species included in the genera *Totanus*, *Scolopax*, and *Tringa*, that the generic division and term, *Machetes*,* in reference to its pugnacious habits, proposed for it by Baron Cuvier, in the Edition of his Regne Animal, dated 1817, has been admitted by many systematic writers, and adopted by M. Temminck in the fourth Supplementary Part of his Manual, as already quoted. The most marked distinctions of this species, which up to the present time is the only one of the genus known, are, the periodical assumption by the males of the Ruff about the neck, which has led to the English name: that scarcely any two of these males can be found of the same colour, which is very unusual among wild birds, while the females are uniform in colour, or nearly so: that the males are polygamous, and about one third larger than the females, in both of which points the Ruffs differ from the characters of the genera named.

The Ruff, like several of the species lately described, may be considered only as a summer visiter to this country, making its appearance in April and departing again in autumn, at which time the young birds of the year, in small flocks, are also seen, and single birds are occasionally killed in winter. Formerly many of the adult birds remained with us during the summer, and bred in the fens of Cambridgeshire, Norfolk, and Lincolnshire.

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* Pugnator.

Montagu made a tour through Lincolnshire that he might become intimately acquainted with all the history of this singular species that could be obtained. "He found that the birds were much more scarce than they had been before a large tract of the fens was drained and enclosed, and would probably, as agriculture increased, be entirely driven from the island. A few he observed are still found about Crowland, but the north fen near Spalding, and the east and west fens between Boston and Spilsby, are the only parts that appear to produce them with certainty, but by no means plentiful."

That these birds were formerly very numerous may be inferred from the fact that a fenman told Pennant he once caught six dozen in one morning. The Rev. James F. Dimock wrote me word that some Reeves (the name applied to the females) still breed in Cawlish Wash, near Spalding. I have a note of ten dozen of these birds, fatted for the table, coming to Leadenhall market on the same day in the year 1824.

Montagu observes that "the trade of catching Ruffs is confined to a very few persons, and scarcely repaid their trouble and the expense of nets. These people live in obscure places on the verge of the fens, and are found out with difficulty, for few, if any, birds are ever bought but by those who make a trade of fattening them for the table. Mr. Towns, the noted feeder at Spalding, assures us his family had been a hundred years in the trade; that they had supplied George the Second and many noble families in the kingdom. He undertook, at the desire of the late Marquis of Townsend, when that nobleman was Lord

Lieutenant of Ireland,* to take some Ruffs to that country, and actually set off with twenty seven dozen from Lincolnshire, left seven dozen at the Duke of Devonshire's at Chatsworth, continued his route across the kingdom to Holyhead, and delivered seventeen dozen alive in Dublin, having lost only three dozen in so long a journey, confined and greatly crowded as they were in baskets, which were carried upon two horses. During our stay at Spalding we were shown into a room where there were about seven dozen males and a dozen females, and of the former there were not two alike. Our intrusion to choose some birds, drove them from their stands, and compelling some to trespass upon the premises of others, produced many battles. It is a remarkable character of these birds that they feed most greedily the moment they are taken; a basin of bread and milk, or boiled wheat placed before them is instantly contended for, and so pugnacious is their disposition, that they would starve in the midst of plenty, if several dishes of food were not placed amongst them, at a distance from each other. Their actions in fighting are very similar to those of a game cock: the head is lowered and the beak held in a horizontal direction; the ruff, and indeed every feather more or less distended, the former sweeping the ground as a shield to defend the more tender parts; the auricles erected, and the tail partly spread, upon the whole assuming a most ferocious aspect. When either could obtain a firm hold with the bill, a leap succeeded, accompanied by a stroke of the wing; but they rarely injured each other."

"Few Ruffs, comparatively speaking, are taken in the spring, as the old birds frequently pine, and will not readily fatten. The principal time is in September, when the young birds are on the wing; these are infinitely more delicate for the table, more readily submit to confinement, and are less inclined to fight. If this plan was generally enforced by the proprietors of fen-land, or made a bye-law amongst themselves, the breed would not be so reduced; but there are still fowlers who make two seasons, and by catching the old birds in the spring, especially the females, verify the fable of the goose and the golden eggs: the destruction of every female in the breeding season is the probable loss of four young."

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* Appointed in Oct. 1767.

"The manner of taking these birds is somewhat different in the two seasons: in the spring the Ruffs *hill*, as it is termed, that is, they assemble upon a rising spot of ground, contiguous to where the Reeves propose to deposit their eggs; there they take their stand, at a small distance from each other, and contend for the females,—the nature of polygamous birds. This hill, or place of resort for love and battle, is sought for by the fowler, who from habit discovers it by the birds having trodden the turf somewhat bare, though not in a circle as usually described. When a hill has been discovered, the fowler repairs to the spot before the break of day, spreads his net, places his decoy birds, and takes his stand at the distance of about one hundred and forty yards, or more, according to the shyness of the birds. The net is what is termed a single clap-net, about seventeen feet long and six feet wide, with a pole at each end; this, by means of uprights fixed in the ground, and each furnished with a pulley, is easily pulled over the birds within reach, and rarely fails taking all within its grasp; but in order to give the pull the greatest velocity, the net, if circumstances will permit, is so placed as to fold over with the wind: however, there are some fowlers who prefer pulling it against the wind for Plovers. As the

Ruffs feed chiefly by night, they repair to the frequented hill at the dawn of day, nearly all at the same time, and the fowler makes his first pull according to circumstances, takes out his Birds, and prepares for the stragglers who traverse the fens and have no adopted hill; these are caught singly, being enticed by the stuffed birds. These stuffed skins are sometimes so managed as to be moveable by means of a long string, so that a jerk represents a jump, a motion very common among Ruffs, who at the sight of a wanderer flying by, will leap, or flit a yard off the ground, by that means inducing those on wing to come and alight by him."

"When the Reeves begin to lay, both those and the Ruffs are least shy, and so easily caught, that a fowler assured us he could, with certainty, take every bird in the fen in the season. The females continue this boldness, and their temerity increases as they become broody; on the contrary, we found the males at that time could not be approached within the distance of gun-shot. The females, the Reeves, begin laying their eggs the first or second week in May; and we have found their nest with young as early as the third of June. By this time the males cease to go to *hill*. The nest is usually formed upon a tump in the moist swampy places, surrounded by coarse grass, of which it is also formed. The eggs are four in number, of an olive colour, blotched and spotted with clove and liver brown: one inch seven lines in length, by one inch one line and a half in breadth. The young, while covered with down, are prettily spotted, soon leave their nest, and are difficult to find without a good dog. The autumnal catching is usually about Michaelmas, at which time few old males are taken, from which an opinion has been formed, that they migrate before the females and young. It is, however, more probable that the few which are left after the spring fowling, like other polygamous birds, keep in parties separate from the female and her brood till the return of spring." Montagu took the trouble of transporting several of these birds, both males and females, with him from Lincolnshire into Devonshire, some of them lived three years in captivity, and one of them four years: the changes they underwent will be noticed under the description of plumage. Montagu says, that "in confinement the males paid no attention to the Reeves, except to drive them from their food; they never attempted to dispute with any other species, but would feed out of the same dish with Land Rails, and other birds confined with them, in perfect amity." In a wild state they feed upon insects and worms.

In Ireland, as recorded by Mr. Thompson, the Ruff appears occasionally in spring and autumn. A few are observed in various parts of England, generally in autumn. A considerable flight, supposed to be young birds, were seen near Godalming in Surrey, on the 20th of August, 1836. The Rev. Richard Lubbock sends me word that in Norfolk the Ruff is still found in small numbers, in different parts of the fens of that county, but so much decreased, that the fenmen find setting snares for them no longer answers. He has never known them taken with a net in Norfolk, but always by the gun, or horsehair nooses disposed around the *hill.* An old snarer told him he had taken six couple in a morning off one hill. A man has been known to make five or six pounds by these birds, sold at two shillings each, in one season. A small flock annually frequents Prestwick Car, near Newcastle-upon Tyne, in autumn. Mr. Heysham has recorded the appearance of young birds in the neighbourhood of Carlisle, in the autumn of 1830, and '32.

Mr. Dann's notes on the Ruff in Scandinavia are as follow: "This bird appears in great numbers on the coast of Scona at the end of April or the beginning of May, but is not known to breed in the southern parts of Scandinavia, although it breeds abundantly in Denmark, from whence I have had the eggs. It arrives in Lapland the last week in May, and frequents, on its first coming, the shores of the lakes and rivers; as soon, however, as the swamps are thawed, and the grass begins to spring up, which is simultaneous in Lapland, it conceals itself in the extensive and grassy morasses, is seldom seen on the wing, and is not flushed without some difficulty, flying only a few yards, but generally getting up out of shot. At Killingsuvanda, Gellivara, and Juckasiervi, they were common. They migrate south; the old birds by the end of July, and the young in August. After the 15th of August almost all the waders disappear from Lapland. They are very fat during the summer. They are known to go as far north as Iceland; they also visit Russia, Siberia, and the countries to the southward. In France, Provence, Switzerland, Italy, and some of the islands of the Mediterranean, these birds are only seen during their spring and autumn migration; a pair occasionally remaining to breed in Switzerland, as mentioned by Professor Schinz in his *Fauna Helvetica*, published in 1837. My friend Dr. Calvert gave me a Reeve that was shot at Malta in the commencement of spring. The Zoological Society have received specimens, sent by Sir Thomas Reade, from Tunis, and others sent by Keith Abbot, Esq., from Trebizond. M. Menetries found this species in the countries about the Caucasus.

This species has been found in north western India, in Nepal, and in the vicinity of Calcutta.

The Ruff, in his breeding plumage, from which the engraved figure was taken, has the beak one inch and a half in length, and brown; the irides dusky brown; the head, the whole of the ruff, or tippet, and the shoulders, of a shining purple black, transversely barred with chestnut; scapulars, back, lesser wing-coverts, and some of the tertials, pale chestnut, speckled and tipped with black; greater wing-coverts nearly uniform ash-brown; quill-feathers brownish black, with white shafts; rump, and upper tail-coverts, white; tail-feathers ash-brown, varied with chestnut and black; the feathers of the breast, below the ruff, and on the sides, chestnut, tipped with black; belly, vent, and under tail-coverts white, with an occasional spot of dark brown; legs and toes, pale yellow brown; claws, black.

Whole length of the male about twelve inches and a half. Wing, from the carpal joint to the end of the first quill-feather, which is the longest, six inches and a half. The weight of a Ruff about six ounces, but a Ruff, when fatted, will weigh ten ounces.

Montagu says "the long feathers on the neck and sides of the head, in the male, that constitute the ruff and auricles, are of short duration, for they are scarcely completed in the month of May, and begin to fall the latter end of June. The change of these singular parts is accompanied by a complete change of plumage; the stronger colours, such as purple, chestnut, and some others, vanish at the same time, so that in their winter dress they become more generally alike from being less varied in their plumage; but we observed that those who had the ruff more or less white, retained that colour about the neck after the autumnal moulting was effected. We noticed that in confinement their annual changes never varied; every spring produced the same coloured ruff and other feathers, but the tubercles on the face never appeared. A young male that was taken destitute of a ruff in the breeding-season, whose plumage was mostly cinereous, except about the head and neck, put on the ruff in confinement the next spring for the first time, which was large, and the feathers were a mixture of white and chestnut; the scapulars and breast also marked with chestnut; and in the succeeding autumnal moulting he reassumed his former cinereous plumage."

In a specimen, kept over two summers, at the Gardens of the Zoological Society in the Regent's Park, the moulting of the ruff commenced on the head and neck, about the 29th of March 1832; the feathers on the body were not thrown off; the head and neck were left destitute of plumage, but the feathers of the body remained in a perfect state. The new ruff and head feathers appeared almost immediately, and were perfected by the fourth of May. This bird began to shed his ruff feathers on the 8th of June, and by the 6th of July he had lost them all. The feathers that formed the ruff round the neck of this same bird in the spring of 1831, were ash coloured; but the feathers that ornamented the same part during the spring of 1832 were decidedly black.

A female, killed at the end of April, from which the representation was taken, had the beak one inch and one-quarter in length, dark brown at the point, but lighter in colour at the base; irides dusky brown; head and neck, ash-brown, the centre of each of the small feathers darker than the margin, producing a spotted appearance; scapulars, back, wing-coverts and tertials, nearly black, with broad ash-brown margins; some of the great wing-coverts and tertials, barred transversely with pale reddish brown; primaries dull black, with white shafts; secondaries edged with pale brownish white; rump, and upper tail-coverts brown; tail-feathers, ash-brown, barred transversely with pale reddish brown, and black; chin, greyish white; feathers of the front of the neck, the breast, and sides, black in the centre, with broad greyish-white margins; belly, vent, and under tail-coverts, white; legs and toes, pale yellowish brown; claws black.

The whole length of a female ten inches and a half. The wing, from the carpal joint to the end of the first quill-feather, which is the longest, six inches and a quarter.

The vignette represents a Chamois hunter.

END OF THE SECOND VOLUME.

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